

1. Appraise contract documentation

A. SOW – Trade Specific Requirements:

- (45) Site is within a fire ant zone. Excavated material to be transported within the zone.

– Project Specific Requirements:

- (3) No onsite parking – only for unloading
- (4) No noisy works 7.30am – 10am daily
- (8) For works outside of the Kane site boundary, a QUT Health and Safety Induction is required to be completed

– Contract Specific Requirements:

- (9) Plant coming from other sites must be washed down and certified to comply with Fire Ant controls
- (25) Form 16 (Required)

B. Only Lantrak could supply trucks on the days required at short notice (client was pushing to get started on site)

EPH and Pinkenba Operations couldn't supply trucks for the cut to waste works

C. Lantrak confirmed availability and sent quote – refer quotes

Pinkenba Operations confirmed they could supply the 2.5 re VW002 works

D. Access was limited to one road in and out to the site. One temp entrance was constructed to allow for the incoming trucks to enter and exit. Material was excavated and stockpiled in middle of work area to allow the trucks enough room to drive in load/unload and drive out. Police escort required for the float in/out of the 23T exc and roller as there was a low bridge clearance identified.

E. Contract start date was 02/12. Due to rain Carsburg commenced on site 06/12.

All documentation for authorities was provided by the Client (Kane).

As per SOW Contract Specific Requirements (2), Carsburg allowed for and carried out the works as per the contract documents (drawings, specs, conditions), relevant building codes, Australian Standards, industry codes of practice and local council regulations. Refer Drawings Standard Notes

F. All site deliveries were recorded in daily diary by the site supervisor. Refer daily diary Material delivery dockets were signed off by site supervisor. Refer 2.5 delivery dockets As per SOW Trade Specific Requirements (14 through 18), Deliveries need to be booked in with client a min of 48hrs in advance. Subcontractor is fully responsible for accepting deliveries and unloading.

2. Construction Operation Strategies

A. Organisational strategies –

- PM/Site Supervisor appointed - Rod/Dave and Arty when Rod was on leave
- Determined Plant/Equipment/Labour required and confirmed with CEM allocations team and booked in
- Contract handover from estimator to PM and brief provided to team
- Daily Toolbox Talks at office and on-site/emails/texts
- PO's organised for plant hire/material supplier and provided to suppliers. Refer GLB PO

B. All plant/equipment used onsite was uploaded to Kane Hammertech platform – Risk Assessments, Service reports, SWMS provided.

Roller Hire – PO provided. Delivery docket received when delivered to site.

Inspected by client when arrived on site and details recorded/photo's taken to document condition

(PS:05 Record Keeping Registers, CEM Plant & Equipment Checklist Appendix E)

C. WHS/Risk Management – SWMS / ITP's

- Refers to Qld WH&S Act 2011
- Refers to Qld WH&S Regulation 2011
- Refers to Code of Practice eg. Hazardous manual Tasks
- Refers to Australian Standards
- E.G. PS:04 Working near live electrical installations – Qld Elec Safety Act 2022, Qld Code of Practice, Aus/NZ Standard 3012 and 3015

D. Existing services identified and removal organised by client if required. Client provided us with a services locations report.

Hazardous Materials Procedure - When hazardous materials are found (eg Asbestos), the client is informed immediately and we follow their procedure. If they ask us to have the material removed, we then engage 3rd party subcontractors as we are not a licenced asbestos removalist:

- Engage Hazure Consultants (Hygienist) for visual and air monitoring as required.
- Engage Zero Asbestos to carry out the removal of the asbestos containing material in accordance with Queensland How to Safely Remove Asbestos Code of Practice December 2011.
 - Waste is disposed of at an authorised asbestos disposal site and Waste Tracking Certificates provided/issued
 - provide notification of pending asbestos works to adjacent stakeholders including business and domestic premises
 - generate all site-specific safety documentation including:
 - submission of a Form 65 to Workplace Health and Safety QLD
 - Preparation of a site-specific Safe Work Method Statement, Asbestos Removal Control Plan and Emergency Plan
- Carsburg would provide the necessary plant/operator – plant washed down after works completed and operator provided with appropriate PPE.

Prac Task 1 QUT

- E. Multiple projects are tracked and controlled through Civil Monthly Programme Refer E.G Dec/Jan

3. Project Schedule

- A. Construction Operations Sequence - refer BOQ – Programme. As per SOW Contract Specific Requirements (1), works were co-ordinated with preceding and following trades and SOW Trade Specific Requirements (50) Allow to stage and sequence works as required for coordination with other trades and engineering/Geotech inspections
- B. Project Schedule – refer schedule/gantt chart
- C. Critical Path – Cut to waste BOQ 3.4 delayed due to weather and soft spot remove and replace (VW002)
- D. Programme was adjusted to allow for wet weather, Christmas shutdown period/Client shutdown

4. Require Resources

- A. Client organised temp site office, water, bins, toilet, temp fencing etc
Carsburg organised Temp Entrance
- B. Plant requirements determined by BOQ sequence of activities/SOW/Client Program – Documented in Carsburg programme
SOW Trade Specific Requirements (1) Supply all labour, plant and materials to carry out the works in accordance with contract drawings, specs and general conditions of contract.
(4) Allow for adequate labour and materials to maintain Kane Program.
- C. Labour requirements determined by BOQ sequence of activities/SOW/Client program - Documented in Carsburg programme. As per above and SOW Contract Specific Requirements (17) The subcontractor is to supply a competent site supervisor/foreman to liaise with the contractors project team at all times while your company is undertaking any works on site.

Refer Call Forward sheet for list of plant, equipment, materials and labour requirements

5. Condition reports

- A. Reports on existing buildings and structures adjacent to the site were performed by the client (Kane) Refer to Kane Site Mark Ups – DWG 01 Site Location Plan, also the Underground Service Locations Site Report/Site Details for photos of adjacent buildings etc
Also refer Geotech Report for existing ground conditions
- B. The site is for QUT within the QUT campus

Civil and Earthworks - Scope of Works

The following items are to be read in conjunction with the design documentation, tender documentation and subcontract agreement as mutually explanatory documents. Any discrepancies discovered should be referred to Kane Constructions (QLD) Pty Ltd for clarification and determination. In the event of a discrepancy, the higher requirement is deemed to have been allowed by the subcontractor.

General Requirements

No.	Item Description
1	Consideration must be given to the potential impact these works will have on all stakeholders, and plans implemented to minimise any nuisance. Noise, vibration and dust control, uncontrolled truck movements, construction staff behaviour, presentation etc will all need careful consideration and management systems in place.
2	Only personnel who have undertaken a Site Specific Induction will be permitted to enter the site. (Including general induction cards ie. blue cards and any Client induction requirements). Inclusive of all PPE required for each employee.
3	Hammertech will be used for all safety documentation and reporting
4	The Subcontractor must complete all online work health and safety procedures via Hammertech prior to arriving to site to commence works including, but not limited to, updating company details and insurances, uploading SWMS, uploading MSDS, uploading company WHS Management Plans, completing individual worker site inductions. All documents are to be uploaded a minimum 1 week prior to site commencement
5	Each worker must complete their own online site induction (on Hammertech) prior to arriving to site. The completed induction will then be signed off by the Site Manager on their first entrance to the site.
6	Procore will be used for the transmittal of drawings, specifications and project specific documentation. All communication is to be transferred and shared electronically via Procore.
7	It is the Subcontractors responsibility to ensure Procore is regularly checked for updated documentation to ensure it is constructing from the current drawings.
8	The Subcontractor must sign in (at the start of a shift) and sign out (at the end of a shift) each day using the sign-in tablet or book provided on site by the Contractor.
9	The Subcontractor is deemed to have examined the tender documents, the site and its surroundings including any existing buildings or other structures and any other information made available by Kane to the Subcontractor for the purpose of finalising the contract sum.
10	The Subcontractor is deemed to have inspected the site and is fully aware of the individual constraints of the project, including the location of all services. No consideration will be given to the Sub-contractor if they are unaware of the work place conditions.
11	It is acknowledged that the Subcontractor has satisfied itself as to the correctness and sufficiency of the contract documents and that it's price covers the cost of complying with all the requirements of the Subcontract Documents and of all matters and things necessary for the due and proper performance and completion of the work described in the Subcontract Documents.
12	The tender sum must 'fully' reflect the requirements of the tender documents. Any alternatives must be notified (and accepted) and priced separately, e.g. alternative products, programming, exclusions etc
13	As a minimum, the Subcontractor shall provide their personnel with and ensure the use of the following mandatory PPE at all times: • Safety helmet • Steel cap footwear • Gloves • High visibility shirt or vest • Safety glasses (as required by your SWMS). • P2 Masks or Respirators (as required by you SWMS) • Hearing protection to be carried at all times and used as necessary appropriate to the task.

Contract Specific Requirements

The Subcontractor shall supply all necessary labour, plant and materials to complete the works in accordance with the Scope of Works Document, drawings, specification, conditions of Subcontract, statutory requirements and inclusive of but not limited to the following:

No.	Item Description
1	Co-ordination of the works with all preceding and following trades, inclusive of all interfacing requirements and service coordination meetings and drawings.
2	Allow for all costs to comply with the contract documents (drawings, specifications, conditions etc.), relevant Building Codes, Local Council Regulations, Australian Standards, International Standards (where applicable) and industry codes of practice and to the satisfaction of the Statutory Authorities and relevant Utility Companies.

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3	The Subcontractor's price is deemed to include for all permits, tests, inspections, fees, statutory requirements, and any legislative requirements necessary to undertake the subcontract works.
4	Allow for inspection and testing as nominated in the contract documents.
5	Allow for materials to be of common material in colour and finish for each connected area where required.
6	Detailed Safe Work Method Statements are to be provided to the Contractor at least 1 week prior to commencing on site and prior to any changed methods. This SWMS will be measured against the Contractor's Schedule K2 and any modifications required to the subcontractors SWMS will be completed immediately. Failure to develop an approved SWMS may result in the subcontractors inability to commence works and cause delays to the project.
7	Subcontractor to allow for the execution of works in the sequence required and for any breaks in continuity.
8	The Subcontractor is to ensure that all the machines brought onto site are maintained and log-booked in accordance with all WH&S laws and inducted under the Hammertech system. All documents required by the Hammertech plant/equipment induction are to be uploaded and approved.
9	All plant coming from other sites must be washed down and certified to comply with the current Fire ant controls. Inspection and approval of all equipment will be undertaken at the discretion of the Contractor. Any rejected plant is not to be used on site.
10	The Subcontractor is to maintain all their plant and equipment in first class condition at all times.
11	Workers are required to produce to the Contractor, all relevant and current tickets and licences as required by government authorities prior to operating plant and equipment on site.
12	The Subcontractor shall provide programmes as requested by the Contractor to ensure works are coordinated with other trades and the Contract Programme.
13	Regular attendance at meetings as requested by Kane is required
14	The Subcontractor shall hold his own tool box meetings as required and as requested.
15	The Subcontractor is to make allowance for any overtime required to meet the Contractor's program. This could mean the extension of daily hours or Sunday work at a no extra cost.
16	The Subcontractor shall make allowance for the Contractor and the Principals representatives to inspect any off site manufacture or stored materials which are intended for inclusion in the subcontract works at the request of the Contractor.
17	The Subcontractor is to supply a competent site supervisor/foreman to liaise with the Contractor's project team at all times while your company is undertaking any works on site.
18	The Subcontractor is to supply their own setout for the works in accordance with the drawings and or specifications from a datum point or points supplied by Contractor. The Contractor will provide one (1) temporary bench mark and one (1) survey grid in each direction per level of the building only in DWG format for survey control. Any further set out points requested will be charged to the Subcontractor accordingly.
19	It is a requirement that the Subcontractor review all of the project documentation. No variation will be accepted for works referred to in one section of the documentation but excluded from others. It is the Subcontractor's responsibility to ensure at all times that they are working from the latest issues of drawings while ensuring that all relevant codes, specifications and installation practices are adhered to.
20	The documentation may not be fully detailed when issued for tender. The subcontractor however acknowledges the intent of the works required and has allowed for all items required to complete their trade requirements.
21	The Subcontractor is to provide their own set of drawings and specifications on site at all times. It is the responsibility of the subcontractor to ensure the documents are current and up to date.
22	Where the drawings or specification or other subcontract documents do not specifically cover an item or items of work, material or finishes, and such item or items are necessary to complete the Subcontract Works, the Subcontractor will be deemed to have made allowance for the provision of such item or items to a construction standard suitable for the Subcontract Works as contracted.
23	As per the contract clauses, site instructions are not deemed a variation and only as direction to proceed with works. Valuation and extent of work to be assessed and determined by the project team after reviewing all relevant information.
24 N/A	The Subcontractor shall provide draft Operation and Maintenance Manuals including all warranties, guarantees and certificates to the Contractor two (2) months prior to projected date for Practical Completion. Upon approval by the Contractor, 1 digital and 1 hardcopy final hand over manual shall be issued by the Subcontractor.
25	The Subcontractor is to provide: - Form 16 (Required) - Form 15 (where required Balustrades, Glazing, Some metalwork items, sprinklers) - Provide samples as required - Shop Drawings - As Constructed Drawings - Operations and Maintenance Manuals - Warranties - Training and Spares

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26	Reinstatement of any damage to surrounding/adjoining works caused by the Subcontractor.
27	The Subcontractor is to allow for the preparation and submission of all product data, test reports and installation data as required by Kane's Quality Management System.
28	The Subcontractor is to provide all samples and shop drawings at times appropriate to allow for comment without delaying the construction programme.
29	If at any time during the progress of the work under the Contract, any error is discovered in the position, level, dimensions or alignment of any part thereof, the Subcontractor shall immediately on their discovery of the error notify the Contractor and shall, unless the Contractor otherwise directs, rectify the error.
30	The Subcontractor shall allow for the provision of all noise and vibration suppression to any plant or equipment which may cause a nuisance to the neighbours or other workers.

Trade Specific Requirements

The Subcontractor shall design, supply all necessary labour, plant and materials to complete the works in accordance with the Scope of Works Document, drawings, specification, conditions of Subcontract, statutory requirements and inclusive of but not limited to the following:

No.	Item Description
1	Supply all labour, plant and materials to carry out these works in accordance with contract drawings, specification and general conditions of contract.
2	The Subcontractor price allows for costs associated with resolution and modifications in construction for all buildability issues.
3	The Subcontractor is to allow for all coordination associated with hold points in its Works (or the works of other associated trades).
4	Allow for adequate labour and materials to maintain Kane program.
5	The Subcontractor is to make itself aware of lead times for all items of equipment and notify the Contractor immediately of any affect to the Construction Programme
6	Allow to provide protection against damage and theft to incomplete and complete works in this scope until Practical Completion of the project
7 N/A	The Subcontractor shall provide all work specific barriers including hoardings and any other protective arrangements necessary to execute the works together with the appropriate certification.
8	Provision of all barricades, ladders, scaffolds, handrails, spreader bars, additional cranes as required, lighting and warning signs required for carrying out these works in accordance with all statutory safety requirements. This includes scissor lifts, boom lifts etc.
9	In the special (and previously agreed) circumstance that the Contractor has provided an EWP on for access then it is the responsibility of the Subcontractor to provide a licensed and competent operator when using the machine. If the Subcontractor is unable to provide a licensed operator then the Contractor is able to provide one for the Subcontractor at the rate of \$90/per hour.
10	The Subcontractor has allowed for all traffic management specific to their trade works or deliveries (and all associated subtrades and suppliers) for the duration of the works. Kane Construction has no traffic management available for the specific use by the Subcontractor. The subcontractor needs to work in accordance with TGS provided by KANE.
11	The subcontractor, where working on or in the vicinity of the waterproofing membranes shall ensure that their work does not damage the membrane. Failure to do so and if proven, may result in the rectification costs to be passed onto the subcontractor.
12	Task lighting is to be supplied by the subcontractor. General access lighting provided by Contractor.
13	Provide labour and equipment required for all unloading, loading, manoeuvring and hoisting of materials and equipment onto and off transport vehicles to the works and around the site. To aid this, it is required that the Subcontractor ensures that the deliveries are to arrive on a truck with a mounted forklift or Hiab.
14	Safe delivery, unloading, storage and protection of materials and equipment on site prior to installation
15	Kane will not provide any vertical transport for the subcontractor unless otherwise agreed within this Subcontract. Bring crane trucks if required to unload materials.
16	A forklift (or telehandler) is <u>not</u> provided on site for the use of unloading and loading materials. It is the responsibility of the Subcontractor to ensure they provide all vertical and horizontal transport of materials on the site.
17	All deliveries, whether requiring craneage or not, shall be formally booked in with the Contractor a minimum of 48hrs in advance
18	The Subcontractor shall allow for all materials handling and site movement (vertical and horizontal) from point of delivery to place of work, including all labour and plant such as forklifts, manitous and trolleys where required. The Subcontractor shall be fully responsible for accepting deliveries and coordinating unloading.
19 N/A	The Subcontractor shall provide all craneage in excess of that provided by the Contractor as necessary to complete the Subcontract Works. It is the Subcontractor's responsibility to assess the Subcontract works to ascertain these requirements, which is deemed to be included within the Subcontract Sum.

20 N/A	If the Contractor is to provide carnage, it will only provide carnage at the pre-schedule crane lift day. Kane will not specifically hire a crane just for the use of a single subcontractor.
21	Materials and equipment is not to be placed in paths of travel or areas other than predetermined loading zones and lay down areas.
22	Complete "Trade Clean" of all surfaces on completion including the removal of finger marks, grease, excess adhesive etc to the complete satisfaction of the Contractor. Skips will be provided by the Contractor so the subcontractor can dispose of their construction waste.
23	Clean and remove all trade and installation markings created or applied by the subcontractor immediately prior to final clean operations.
24	All Subcontractors will carry out daily clean-up of their work areas. Subcontractors shall also provide personnel for a full site clean-up from time to time when deemed necessary by the Contractor. Should the Subcontractor fail to undertake their specific site cleaning, then the Contractor reserves the right to engage others to undertake the works at the Subcontractor's expense.
25	The subcontract acknowledges that cutting of any products containing Silica such as; • Concrete, mortar, brick, blocks, pavers, tiles, natural and composite stone benchtops • Cement-based materials such as fibre-cement sheet and autoclaved-aerated concrete, Must be completed whilst under appropriate Silica dust controls.
26	All subcontractors working with any of the above mentioned silica based products must; • Have Fit Tested masks (minimum P2) and provide copies of Fit Testing for verification. • Supply and use of M Class Vacuums with the appropriate filters and attachments (as required). Any costs required to comply with the above are deemed to be included in your subcontract sum. Kane's Schedule R 'Risk Assessment' is to be referred to for further information if required.
27	Ensure all penetrations through fire rated elements are inspected and certified in accordance with relevant Australian Standards.
28 N/A	The Subcontractor has allowed for sealing or flashing against adjacent surfaces where the Subcontractors work creates a joint or abutment.
29 N/A	Where the works join, meet, penetrate or finish adjacent to pre-existing works, the Subcontractor shall allow for all sealing, flashing, finishing off and making good of the Subcontract works to the pre-installed works.
30	Acceptance of surfaces as found. Commencement of work in that area constitutes acceptance of the substrate in that area. Refer to Geotech report and work as per Geotech Report Provided.
31	It is the Subcontractor's responsibility to ensure all works are in full compliance with 'Section J' of the Building Code of Australia and project Energy Efficiency Report. The Subcontractor shall also reference this compliance in their relevant Form 15 and 16's.
32	Defects are to be carried out progressively with final payment being released upon completion of all defects to the satisfaction of the Site Manager, along with receipt of all As-Built drawings, O&M Manuals, warranties, certificates and guarantees.
33	Work carried out by Kane Constructions for and on behalf of subcontractor shall be at an invoice cost plus 10%. Any management costs incurred will also be passed on.
34	Establish finished R.L's from datums provided by the Contractor and placement to required tolerances. Monitor and maintain during operations.
35	All control measures required to ensure eroded materials do not contaminate other works, access ways and public property for the duration of the subcontract works.
36	Allow to excavate in all materials as found and documented within Bore logs
37	Maintain excavations free from rain and percolating water by pumping or other adequate means until concrete has been poured.
38	Backfill and compact subgrade to all areas as shown on the drawings. Allow for backfill with suitable material and compaction to all areas where concrete pathways etc were removed (note reinstatement of concrete pathways etc by others). Subcontractor did not allow for. If required backfill to be in accordance with schedule of rates provided by Subcontractor.
39	Grade to level and compact subgrade to all areas as shown on the drawings
40	Perform appropriate testing of compacted areas and supply results to the satisfaction of the Contractor in accordance with the specification and drawings. Should results be insufficient additional compaction and testing shall be carried out.
41	All detailed excavations as documented inclusive of temporary shoring as required
42	All plant coming from other sites must be washed down and certified to comply with the current Fire Ant Controls.
43	Allow for road cleaning as required for your works
44	The subcontractor has read the geotechnical report and agrees with the methodology contained within
45	Site is within a fire ant zone. Excavated material to be transported within the zone
46	Protect all retained trees from damage excavation and collapse
47	The Subcontractor has allowed for all traffic management for their trade works (and all associated sub-trades and suppliers) for the duration of the Works. Kane has no traffic management available for use by the Subcontractor. Traffic control in accordance with TGS.

48	Allow for all dust control, including sprinklers, or manual spraying. Allow for water trucks if required to ensure dust control
49	Kane will provide survey benchmarks only. The earthworks subcontractor is to provide all setout, levels and surveying works. KANE to provide DWG Files to Subcontractor.
50	Allow to stage and sequence works as required for coordination with other trades and engineer/geotech inspections as instructed by the Main Contractor. 1 Site Mobilisation only
51	The subcontractor where required by law or legislation will install safety signage or barricading as required at each work face.
52	Inform yourself about the location of services (including in-ground) either existing, new or temporary, and be responsible for all costs associated with making good if they are damaged as a result of the Subcontractors activities. Kane have had service location report completed and marked on site. Subcontractor is responsible for costs if the subcontractor damages them. Unknown services within the area will be latent condition.
53	Identify live services where exposed during the construction period in- ground and in structure.
54	Sediment Control
55	Supply, Install and Maintain site sediment control as prescribed by the contract drawings and as determined to be required on site. This includes gully pit sediment barriers to potentially affected gully.
56	Allow for the maintenance of the sediment control for the duration of the Subcontractors work period.
57	Install sediment/silt fence as noted on civil drawings.
58	Provide sediment control around field inlets as per civil drawings details. By Plumber
59	Allow for entry exit temporary construction sediment trap with cattle grid and gravel Excludes Grid
60	Allow to remove the cattle grid and rubble at a later date after the subcontractor has demobilised
61	Provide kerb inlet sediment trap to adjacent roads external to site. Supply and maintain sediment socks
62	Bulk Earthworks
63	Allow to clear/grub the site and remove grass and topsoil to levels as directed on site.
64	Remove all obstructions such as boulders, underground obstructions, vegetation and the like and remove from site. Obstructions will be removed as a variation if discovered
65	Remove any excavated material from site promptly to reduce any large stockpiles
66	The Subcontractor is deemed to have allowed for excavation in any materials noted in the geotechnical report as well as rock that is ripable with a 30T excavator. Where rock is uncovered, works to be completed in accordance with "Rock Clause" Supplied by Subcontractor.
67	All fill and excavation transportation and disposal charges are deemed to be included in the Subcontract Sum.
68	Grade to level and compact sub grade to all areas as required.
69	Allow for the detailed excavation of the building platform. Concrete subcontractor to complete detailed excavations for footings (i.e. levels are to be as per the structural drawings, not just the bulk excavation drawings). Subcontractor allows for Bulk excavation only
70	The tolerance on bulk excavations shall be as specified or if not as a minimum be plus / minus 20mm from the final levels unless otherwise required. Over excavations shall be backfilled with an approved material or concrete at the Subcontractor's expense. Maintain a complete record of the depths and surface areas of the completed excavations, relating to such depths and surface areas to the datum information supplied by the Main Contractor. These records shall be submitted to the Main Contractor as and when requested. Records to be countersigned by Main Contractor. As cons by builder
71	Protect any existing services encountered during excavations. Make good any damage done and fill any resultant holes with approved fill or concrete as instructed by the Main Contractor.
72	Comply with any Special Conditions imposed by the Local Authority in respect of the excavations works, including those related to the removal from site of excess excavated materials and the depositing of same.
73	Temporary batters are to be 45 deg unless agreed otherwise by the geotechnical engineer.
74	Allow for all required compaction testing, CBR soaking testing and DCP testing as required to complete the scope of works.
75	Should results indicate insufficient compaction/bearing then additional compaction and testing shall be carried out by the Subcontractor at his expense until the required results are achieved.
76	Proof roll subgrade under geotechnical supervision. Areas demonstrating excessive movement should be treated (dried/watered and re-compacted) if possible, or removed to competent material and replaced with compacted select fill. At Rates provided by subcontractor
77	Backfill
78	Allow for all backfilling requirements as per the plans and specifications and return visits as required to complete this.
79	Backfill and compact behind all retaining walls. This includes any walls with temporary batters or between shoring systems and walls.
80	Backfill with suitable granular material. Allow for the supply of granular material. Backfill the remaining area with fill on site.
81	Allow to backfill behind retaining walls with fill, and compact the fill.
82	Supply and install of Strip Drain will be by OTHERS.

83	Allowance for bulk earthworks to be carried out to all areas as to allow the Main Contractor to undertake the any following activity as without further excavation. All landscaping areas to be trimmed down to the level below top soils and grasses. All pads to cut to the level that is equal to 50mm below slab height.
84	Site Establishment
85	Plant and Equipment maintenance and data sheets are to be supplied to the Head Contractor prior to arriving on site. Once arriving on site, equipment is to be fully inducted to site by the Site Manager.
86	Safe Work Method Statement and Material Safety Data Sheets for Plant, Equipment and Materials being used on site are required to be supplied to the Head Contractor prior to arriving on site. These will be recorded and stored on the Head Contractors Safety Management system for the duration of the project. Where requested, the Subcontractor shall supply this information on site.

Project Specific Requirements/Scope

No.	Item Description
1	Working hours are: Monday to Saturday 6:00am to 6:00pm (but may be increased at the Contractor's discretion)
2	The Subcontractor shall provide all information, certificates, forms and alike required by the Building Certifier or other body to allow the issue of a Certificate of Classification, e.g. Form 15 and/or Form 16. All Form 15's and 16's shall state compliance with the relevant Australian Standards, Regulations, Trade Specific codes, Contract Documents and Building Code of Australia.
3	The Subcontractor shall note that there will be strictly no parking on the site. Subject to the approval of the Contractor, the subcontractor may drive on to site for the sole purpose of unloading materials and tools only.
4	No noisy works between 7.30am – 10.00pm daily. All noisy works i.e. coring, concrete cutting etc. will need to be completed outside of hours.
5	There is a small loading zone within the site compound that can be used for unloading goods. Subcontractors are to comply with the parking restrictions and Kane are not liable for any fines issued to subcontractors
6	There is no free parking available onsite. The subcontractor is to pay for their own parking costs and any fines that the subcontractor receives.
7	The subcontractor is to allow for items contained within the QUT Design Standards and Guidelines. This document can be found at the following link http://www.find.qut.edu.au/operations/design-standards/
8	For works outside of the Kane Site Boundary, the following induction is required to be completed. QUT Health and Safety Induction: http://www.elearn.com.au/qut/ (login qut password qut). Proof of completion is to be supplied to Kane prior to commencement on site

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ROD - 0417 779 245	WEEKLY PROGRAMME - CIVIL WORKS		KANE QUT Gardens Point			
Day/Date	MONDAY 06/12/2021	TUESDAY 07/12/2021	WEDNESDAY 08/12/2021	THURSDAY 09/12/2021	FRIDAY 10/12/2021	SATURDAY 11/12/2021
Job Site	Kane QUT	Kane QUT	Kane QUT	Kane QUT	Kane QUT	
Activity/Task	Site Establishment 1.1	VW001	Temp entrance 2.2	Cancelled Wet Weather	Cancelled Wet Weather	
	Survey 1.3	Silt fence 2.1	Topsoil removal 3.3	Cut to waste 3.4	Cut to waste 3.4	
		Topsoil removal 3.3				
Resources	Aquaholics - Float 23T exc to site	23T excavator 2.2/3.3	23T excavator 2.2/3.3	23T excavator	23T excavator	
		2 loads of 75mm gravel CEM 2.2	Lantrak x 2 3.3	CEM trucks x4	CEM trucks x4	
	Vision Surveys 1.3	23T excavator				
		CEM 10m3 tipper	1 load of 75mm gravel Timms 2.2			
		Vidgil 2.1				
	MONDAY 13/12/2021	TUESDAY 14/12/2021	WEDNESDAY 15/12/2021	THURSDAY 16/12/2021	FRIDAY 17/12/2021	SATURDAY 18/12/2021
Job Site	Kane QUT	Kane QUT	Kane QUT	Kane QUT	Kane QUT	Kane QUT
Activity/Task	Cancelled Wet Weather					
	Cut to waste 3.4	Cut to waste 3.4	Cut to waste 3.4	Cut to waste 3.4	VW002	VW002
				Geotech 3.6	Cut to waste 3.4	
Resources	23T excavator	23T excavator Pat	23T excavator Pat	23T excavator Pat	23tn Exc	23tn Exc Pat
	Lantrak trucks x4	no Lantrak Trucks available	Lantrak trucks x4	Lantrak trucks x7	Dave supervision	Dave supervision
		Dave supervision	Dave supervision	Dave supervision	CEM 10m3 Tippers x 2	Tipper Kidd
					Lantrak trucks x 4	Tipper Shaun W
					23T excavator Pat	truck and Dog Shane
				Construction Sciences 3.6	Lantrak trucks x4	Tipper Kevvie
					Dave supervision	Tipper Batsey
						Tipper

ROD - 0417 779 245	WEEKLY PROGRAMME - CIVIL WORKS		KANE QUT Gardens Point			
	20/12/2021	21/12/2021	22/12/2021	23/12/2021	24/12/2021	25/12/2021
Job Site	Kane QUT	Kane QUT	Kane QUT	XMAS SHUTDOWN	XMAS SHUTDOWN	XMAS SHUTDOWN
Activity/Task	VW002	VW002	VW002			
			Trim and Proof Roll 3.5			
		Float out for Excavator 1.1	Float out for roller 1.1			
Resources	23tn Exc Pat	23tn Exc Pat	Pat Roller operator			
	Dave supervision	Dave supervision	Dave supervision			
	Lantrack T&D's x 4	Drott	Drott			
	Flexihire 12-15T smooth drumb roller	CBR15 GLB Truck and Dogs x 4	CBR15 GLB Truck and Dogs x 4			
	Construction Sciences	Labour/ Roller Mike	Labour Mike			
	CEM 10m3 Tipppers x 2	Flexihire 12-15T smooth drumb roller	Flexihire 12-15T smooth drumb roller			
	Vision Surveys	Construction Sciences	Construction Sciences			
		Watercart	Watercart			
		Global Synthetics - Combi Grid	Vision Surveys			
			Drott 3.5			
			12-15T smooth drumb roller 3.5			
		Aquaholics 1.1	Flexihire 1.1			
	27/12/2021	28/12/2021	29/12/2021	30/12/2021	31/12/2021	01/01/2022
Job Site	XMAS SHUTDOWN	XMAS SHUTDOWN	XMAS SHUTDOWN	XMAS SHUTDOWN	XMAS SHUTDOWN	XMAS SHUTDOWN
	03/01/2022	04/01/2022	05/01/2022	06/01/2022	07/01/2022	08/01/2022
Job Site	XMAS SHUTDOWN	XMAS SHUTDOWN	KANE Shut Down	KANE Shut Down	KANE Shut Down	KANE Shut Down
	17/01/2022	18/01/2022	19/01/2022	20/01/2022	21/01/2022	22/01/2022
Job Site	Kane QUT	Kane QUT				
	VW003	VW003				
Activity/Task	Cut to waste 3.4	Backfill Trenches				
Resources	5T Combo	5T Combo V/Plate				
	CEM 10m3 Tipper	CEM 10m3 Tipper				
	5T Combo V/Plate					
	CEM 10m3 Tipper					
	24/01/2022	25/01/2022	26/01/2022	27/01/2022	28/01/2022	29/01/2022
Job Site		Kane QUT				
		VW003				
Activity/Task		Ex Trenches				
Resources		5T Combo				
		CEM 10m3 Tipper				
	31/01/2022	01/02/2022	02/02/2022			
Job Site		Kane QUT				
		VW004				
Activity/Task						
Resources		5t Combo w/ 600 borer				

Construction Project Schedule

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Project Run Sheet - KANE QUT, Brisbane

Date	Docket Number	Project Allocation	Machine	Task	Hrs	m3	Tonnage	Tolls	Per	Rate	Cost	Invoice	Notes
06/12/2021	AQUAHOLICS	1.1 Site Establishment & Dis-establishment	Aquaholic Float	Float 23T to site	3					175	525	40270	
07/12/2021	VIDGIL	2.1 Silt Fence Erection	Vidgil Silt Fencing up to 40L/M						1	265	265	INV-29342	
07/12/2021	VIDGIL	2.1 Silt Fence Erection	Vidgil Silt Fencing additional L/M	45L/M					45	5	225	INV-29342	
07/12/2021	153224	3.3 Remove 100mm topsoil / grass covering to waste - 1	23 Tonne Excavator	topsoil strip and stockpile	6.5					143	929.5	271999	
07/12/2021	153224	2.2 Temporary entrance shake down's - excl steel grids	23 Tonne Excavator	topsoil strip and stockpile	1					143	143	271999	
07/12/2021	153225	2.2 Temporary entrance shake down's - excl steel grids	Materials & Tips	75mm gravel from Timms 15.29T					1	495	495	272086	
07/12/2021	153227	VAR001 Tree Removal	10m3 Tip Truck	1 x load of stumps/ green to Mt Pine rd Mt Gravatt...	1.25					96	120	272058	
07/12/2021	153227	VAR001 Tree Removal	Materials & Tips			15				84.5	1267.5	272058	
07/12/2021	153226	VAR001 Tree Removal	23 Tonne Excavator	removal of tree stumps	1.5					143	214.5	271998	
08/12/2021	153228	3.3 Remove 100mm topsoil / grass covering to waste - 1	23 Tonne Excavator	Loaded out top soil	8.75					143	1251.25	271999	
08/12/2021	LANTRAK	3.3 Remove 100mm topsoil / grass covering to waste - 1	Lantrak Dispose of Top Soil	2015512		110				13.5	1485	2304716-16	
08/12/2021	LANTRAK	3.3 Remove 100mm topsoil / grass covering to waste - 1	Lantrak Dispose of Top Soil	2039209		80				13.5	1080	2304716-16	
08/12/2021	TIMMS	2.2 Temporary entrance shake down's - excl steel grids	Materials & Tips						1	495	495	271982	
14/12/2021	153508	3.4 Cut to Waste / Fill	23 Tonne Excavator	Bulk out	8.5					143	1215.5	272165	
14/12/2021	153580	3.4 Cut to Waste / Fill	Labour	Dave Supervision and survey	9.5					65	617.5	LABOUR	
15/12/2021	153509	3.4 Cut to Waste / Fill	23 Tonne Excavator	26 loads sent out and trim up of cut	8.75					143	1251.25	272151	
15/12/2021	153582	3.4 Cut to Waste / Fill	Labour	Dave Supervision and survey	9					65	585	LABOUR	
15/12/2021	LANTRAK	3.4 Cut to Waste / Fill	Lantrak Dispose of Clean Fill	2026498 7 loads		70				10	700	2305164-16	
15/12/2021	LANTRAK	3.4 Cut to Waste / Fill	Lantrak Dispose of Clean Fill	2024763 6 loads		60				10	600	2305164-16	
15/12/2021	LANTRAK	3.4 Cut to Waste / Fill	Lantrak Dispose of Clean Fill	2016832 7 loads		70				10	700	2305164-16	
15/12/2021	LANTRAK	3.4 Cut to Waste / Fill	Lantrak Dispose of Clean Fill	2048277 6 loads		60				10	600	2305164-16	
16/12/2021	153687	3.4 Cut to Waste / Fill	23 Tonne Excavator	Cut to waste	9.5					143	1358.5	272151	
16/12/2021	153688	3.4 Cut to Waste / Fill	Labour	Dave Supervision and survey	10					65	650	LABOUR	
16/12/2021	LANTRAK	3.4 Cut to Waste / Fill	Lantrak Dispose of Clean Fill	2016833 7 loads		70				10	700	2305164-16	
16/12/2021	LANTRAK	3.4 Cut to Waste / Fill	Lantrak Dispose of Clean Fill	2031237 3 loads		39				10	390	2305164-16	
16/12/2021	LANTRAK	3.4 Cut to Waste / Fill	Lantrak Dispose of Clean Fill	2026499 7 loads		70				10	700	2305164-16	
16/12/2021	LANTRAK	3.4 Cut to Waste / Fill	Lantrak Dispose of Clean Fill	1063403 6 loads		90				10	900	2305164-16	
16/12/2021	LANTRAK	3.4 Cut to Waste / Fill	Lantrak Dispose of Clean Fill	XQ53LQ 6 loads		60				10	600	2305164-16	
16/12/2021	LANTRAK	3.4 Cut to Waste / Fill	Lantrak Dispose of Clean Fill	XQ33VA 6 loads		60				10	600	2305164-16	
16/12/2021	LANTRAK	3.4 Cut to Waste / Fill	Lantrak Dispose of Clean Fill	XQ30HG 5 loads		50				10	500	2305164-16	
17/12/2021	153855	3.4 Cut to Waste / Fill	23 Tonne Excavator	Cut to waste and load out trucks	6.25					143	893.75	272151	
17/12/2021	153855	VAR002 E/O Remove & Replace Soft Spots / Import Gran	23 Tonne Excavator	Cut to waste and load out trucks	3.5					143	500.5	272151	
17/12/2021	153856	3.4 Cut to Waste / Fill	Labour	Dave Supervision and survey	6					65	390.00	LABOUR	
17/12/2021	LANTRAK	3.4 Cut to Waste / Fill	Lantrak Dispose of Clean Fill	2024765 8 loads (5 contract/3 VW002)		50				10	500	2305164-16	
17/12/2021	LANTRAK	VAR002 E/O Remove & Replace Soft Spots / Import Gran	Lantrak Dispose of Clean Fill	2024765 8 loads (5 contract/3 VW002)		30				10	300	2305164-16	
17/12/2021	LANTRAK	3.4 Cut to Waste / Fill	Lantrak Dispose of Shale	2031238 XQ72SP 5 loads (3 contract/2 VW002)		39				10	390	2305248-16	
17/12/2021	LANTRAK	VAR002 E/O Remove & Replace Soft Spots / Import Gran	Lantrak Dispose of Shale	2031238 XQ72SP 5 loads (3 contract/2 VW002)		26				10	260	2305248-16	
17/12/2021	LANTRAK	3.4 Cut to Waste / Fill	Lantrak Dispose of Clean Fill	1983689 XQ30HG 7 loads (5 contract/2 VW002)		50				10	500	2305164-16	
17/12/2021	LANTRAK	VAR002 E/O Remove & Replace Soft Spots / Import Gran	Lantrak Dispose of Clean Fill	1983689 XQ30HG 7 loads (5 contract/2 VW002)		20				10	200	2305164-16	
17/12/2021	LANTRAK	3.4 Cut to Waste / Fill	Lantrak Dispose of Shale	A04USC XQ84RY 5 loads (4 contract/1 VW002)		52				10	520	2305248-16	
17/12/2021	LANTRAK	VAR002 E/O Remove & Replace Soft Spots / Import Gran	Lantrak Dispose of Shale	A04USC XQ84RY 5 loads (4 contract/1 VW002)		13				10	130	2305248-16	
17/12/2021	153879	VAR002 E/O Remove & Replace Soft Spots / Import Gran	10m3 Tip Truck	2 body loads back to yard 20m3	3.5					96	336	272150	
17/12/2021	153886	VAR002 E/O Remove & Replace Soft Spots / Import Gran	10m3 Tip Truck	1 load of fill from city to banyo. 12m3	2					96	192	272150	
17/12/2021	153809	VAR002 E/O Remove & Replace Soft Spots / Import Gran	Labour	Dave Supervision and survey	4					65	260	LABOUR	
18/12/2021	153820	VAR002 E/O Remove & Replace Soft Spots / Import Gran	23 Tonne Excavator	Cut and load trucks	8.75					143	1251.25	272151	
18/12/2021	153827	VAR002 E/O Remove & Replace Soft Spots / Import Gran	Labour	Dave Supervision and survey	8.75					65	568.75	LABOUR	
18/12/2021	153826	VAR002 E/O Remove & Replace Soft Spots / Import Gran	20m3 Truck & Dog	Removing fill from qut in city to CEM Banyo (80m3)	10.5					130	1365	272149	
18/12/2021	153821	VAR002 E/O Remove & Replace Soft Spots / Import Gran	10m3 Tip Truck	8 x loads of clean fill to CEM Banyo (96m3)	9					96	864	272150	
18/12/2021	153829	VAR002 E/O Remove & Replace Soft Spots / Import Gran	10m3 Tip Truck	6 x General Fill from QUT to CEM (50m3)	7.25					96	696	272150	
18/12/2021	153825	VAR002 E/O Remove & Replace Soft Spots / Import Gran	10m3 Tip Truck	8 x loads remove c/fill to CEM Banyo (70m3)	9.5					96	912	272150	
18/12/2021	153822	VAR002 E/O Remove & Replace Soft Spots / Import Gran	10m3 Tip Truck	9 loads clean fill cem Banyo (70m3)	9.75					96	936	272150	
18/12/2021	153823	VAR002 E/O Remove & Replace Soft Spots / Import Gran	10m3 Tip Truck	Cart 5 loads c/fill (60m3)	7.75					96	744	272150	
20/12/2021	153912	VAR002 E/O Remove & Replace Soft Spots / Import Gran	10m3 Tip Truck	5 body loads fill to banyo (50m3)	10.25					96	984	272310	
20/12/2021	153913	VAR002 E/O Remove & Replace Soft Spots / Import Gran	10m3 Tip Truck	Took 6 loads of fill away (60m3)	9.25					96	888	272310	
20/12/2021	153896	VAR002 E/O Remove & Replace Soft Spots / Import Gran	23 Tonne Excavator	Bulk out	10.25					143	1465.75	272228	
20/12/2021	153583	VAR002 E/O Remove & Replace Soft Spots / Import Gran	Labour	Dave Supervision and survey	10.5					65	682.5	LABOUR	
20/12/2021	FLEXIHIRE	VAR002 E/O Remove & Replace Soft Spots / Import Gran	Flexihire 13T Smoothdrum Roller Float						1	420	420	715442	
20/12/2021	FLEXIHIRE	VAR002 E/O Remove & Replace Soft Spots / Import Gran	Flexihire 13T Smoothdrum Roller						1	235	235	715442	
20/12/2021	CONSCI	VAR002 E/O Remove & Replace Soft Spots / Import Gran	Construction Sciences	Proof Roll, 3 x test hole & inspection					1	234	234	1006-220283	
20/12/2021	LANTRAK	VAR002 E/O Remove & Replace Soft Spots / Import Gran	Lantrak Dispose of Shale	AO4V11		72				10	720	2305260-16	
20/12/2021	LANTRAK	VAR002 E/O Remove & Replace Soft Spots / Import Gran	Lantrak Dispose of Shale	AO4V10		66				10	660	2305264-16	
20/12/2021	LANTRAK	VAR002 E/O Remove & Replace Soft Spots / Import Gran	Lantrak Dispose of Clean Fill	AOV1Q		66				10	660	2305260-16	
20/12/2021	LANTRAK	VAR002 E/O Remove & Replace Soft Spots / Import Gran	Lantrak Dispose of Shale	AO4V1T		66				10	660	2305264-16	
20/12/2021	VISION	1.3 Survey setout - excl S/W	Vision Surveys	26/11 Review Design Data sent and request more from Kane	0.5					125	62.5	26475	
20/12/2021	VISION	1.3 Survey setout - excl S/W	Vision Surveys	03/12 Chasing Data	0.5					125	62.5	26475	
20/12/2021	VISION	1.3 Survey setout - excl S/W	Vision Surveys	06/12 Add heights to 2d design data, generate model, prep for control	2.5					125	312.5	26475	
20/12/2021	VISION	1.3 Survey setout - excl S/W	Vision Surveys	07/12 Find Bennet and Bennet Control, Locate buildings to get onto detail survey datum, read in new control	3.5					125	437.5	26475	
21/12/2021	153811	VAR002 E/O Remove & Replace Soft Spots / Import Gran	12 Tonne Drott	Pushed out fill	11					165	1815	272285	
21/12/2021	153942	VAR002 E/O Remove & Replace Soft Spots / Import Gran	23 Tonne Excavator	Roller, load out last of stock pile	9.75					143	1394.25	272228	
21/12/2021	153944	VAR002 E/O Remove & Replace Soft Spots / Import Gran	Labour	Mike Labour	10.5					65	682.5	272285	

21/12/2021	153817	VAR002 E/O Remove & Replace Soft Spots / Import Gran	Labour	Dave Supervision and survey	10.5					65	682.50	LABOUR	
21/12/2021	153945	VAR002 E/O Remove & Replace Soft Spots / Import Gran	10m3 Tip Truck	Deliver 1 body load CBR45 and return 1 body load c/fill to banyo	4					96	384.00	272298	
21/12/2021	153946	VAR002 E/O Remove & Replace Soft Spots / Import Gran	10m3 Tip Truck	Delivered load of CBR15 from CEM depot to site then took load of clean fill back to CEM	2					96	192.00	272298	
21/12/2021	FLEXIHIRE	VAR002 E/O Remove & Replace Soft Spots / Import Gran	Flexihire 13T Smoothdrum Roller						1	235	235	715442	
21/12/2021	CONSCI	VAR002 E/O Remove & Replace Soft Spots / Import Gran	Construction Sciences	Compaction Test on 200mm first layer					1	310	310	1006-220283	
21/12/2021	AQUAHOLICS	1.1 Site Establishment & Dis-establishment	Aquaholic Float	Float 23T to yard	3.25					175	568.75	40531	
21/12/2021	GLB	VAR002 E/O Remove & Replace Soft Spots / Import Gran	GLB CBR15	475XUR			180.22			14.7	2649.234	272284	
21/12/2021	GLB	VAR002 E/O Remove & Replace Soft Spots / Import Gran	GLB CBR15	710XTF			181.96			14.7	2674.81	272284	
21/12/2021	GLB	VAR002 E/O Remove & Replace Soft Spots / Import Gran	GLB CBR15	408TIP			181.68			14.7	2670.70	272284	
21/12/2021	GLB	VAR002 E/O Remove & Replace Soft Spots / Import Gran	GLB CBR15	287LSB			173.7			14.7	2553.39	272284	
21/12/2021	GLOBAL	VAR002 E/O Remove & Replace Soft Spots / Import Gran	Global Synthetics 4.75 x 100	Combigrid					2	1733.75	3467.50	3994365	
22/12/2021	153812	VAR002 E/O Remove & Replace Soft Spots / Import Gran	12 Tonne Drott	Batters and final trim.	6					165	990.00	272307	
22/12/2021	FLEXIHIRE	VAR002 E/O Remove & Replace Soft Spots / Import Gran	Flexihire 13T Smoothdrum Roller						0.6	235	141	715442	
22/12/2021	153947	VAR002 E/O Remove & Replace Soft Spots / Import Gran	Labour	Mike Roll Pad	9.5					65	617.5	272307	
22/12/2021	153901	VAR002 E/O Remove & Replace Soft Spots / Import Gran	Labour	Pat Traffic control, street sweeping, general labour	6					65	390	272307	
22/12/2021	153818	VAR002 E/O Remove & Replace Soft Spots / Import Gran	Labour	Dave Supervision and survey	9.5					65	617.50	LABOUR	
22/12/2021	GLB	VAR002 E/O Remove & Replace Soft Spots / Import Gran	GLB CBR15	XQ58FQ			113.46			14.7	1667.86	27487	January Invoice
22/12/2021	GLB	VAR002 E/O Remove & Replace Soft Spots / Import Gran	GLB CBR15	XQ24FQ			109.36			14.7	1607.59	27487	
22/12/2021	GLB	VAR002 E/O Remove & Replace Soft Spots / Import Gran	GLB CBR15	XQ26DE			66.88			14.7	983.14	27487	
22/12/2021	GLB	VAR002 E/O Remove & Replace Soft Spots / Import Gran	GLB Wait Time	XQ26DE Waiting Time	1.5					140	210	27487	
22/12/2021	CONSCI	VAR002 E/O Remove & Replace Soft Spots / Import Gran	Construction Sciences						1	310	310	1006-220283	
22/12/2021	VISION	VAR002 E/O Remove & Replace Soft Spots / Import Gran	Vision Surveys	Subgrade replacement volume report and areas	1.5					125	187.5	26980	
22/12/2021	FLEXIHIRE	VAR002 E/O Remove & Replace Soft Spots / Import Gran	Flexihire 13T Smoothdrum Roller Float						1	420	420	715442	
22/12/2021	FLEXIHIRE	VAR002 E/O Remove & Replace Soft Spots / Import Gran	Flexihire 13T Smoothdrum Roller Wait	Police Escort					3	95	285	715442	
22/12/2022	153812	3.5 Final Trim & Proof Roll Subgrade - Pad	12 Tonne Drott	Final Trim	4					165	660	272307	
22/12/2022	FLEXIHIRE	3.5 Final Trim & Proof Roll Subgrade - Pad	Flexihire 13T Smoothdrum Roller						0.4	235	94	715442	
22/12/2022	153901	3.5 Final Trim & Proof Roll Subgrade - Pad	Labour	Pat	4					65	260	272307	
17/01/2022	154378	3.4 Cut to Waste / Fill	10m3 Tip Truck	Remove 4 loads of clean fill to cem banyo	3					100	300	272444	
17/01/2022	154342	3.4 Cut to Waste / Fill	4.5 -6 Tonne Combo	Fill trenches, load truck with fill	4					132	528	272472	
17/01/2022	154521	3.4 Cut to Waste / Fill	15,000L Water Truck	Pass over the trenches. And entire job	2.5					112	280	272472	
17/01/2022	154379	VAR003 Machine Hire and Tip Fees	10m3 Tip Truck	Remove 1 load of fill from Kane site qut city back to cem banyo	5.5					100	550	272443	
17/01/2022	154343	VAR003 Machine Hire and Tip Fees	4.5 -6 Tonne Combo	Cut and prep for slab	5					132	660	272473	
18/01/2022	154526	VAR003 Machine Hire and Tip Fees	10m3 Tip Truck	2 loads to cem banyo and 4 loads of clean fill to esg pinkenba	8.25					100	825	272443	
18/01/2022	154526	VAR003 Machine Hire and Tip Fees	Materials & Tips	Clean Fill to ESG			40			13	520	272443	
18/01/2022	154525	VAR003 Machine Hire and Tip Fees	4.5 -6 Tonne Combo	Remove fill, back fill and compact	8					132	1056	272473	
18/01/2022	154525	VAR003 Machine Hire and Tip Fees	Vibrating Plate		3					42	126	272473	
25/01/2022	154910	VAR003 Machine Hire and Tip Fees	10m3 Tip Truck	Carting clean fill from site to Depot 3 loads	4.75					100	475	272567	
25/01/2022	154777	VAR003 Machine Hire and Tip Fees	4.5 -6 Tonne Combo	Footings	10.25					132	1353	272567	
01/02/2022	154962	VAR004 Bored Piers	4.5 -6 Tonne Combo	600 Pier holes	3					132	396		
01/02/2022	154962	VAR004 Bored Piers	Rock Borer (G.E.T May Be Extra)		2					42	84		
										#N/A	#N/A		
										#N/A	#N/A		
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Project Budget - KANE QUT, Brisbane				
	Qty	Unit	Unit Rate	BURDGET
1. P&G				
1.1 Site Establishment & Dis-establishment		Lump Sum	N/A	\$ 3,600.00
Additional Site Establishment & Dis-establishment's -should it be sequenced as such		Lump Sum	N/A	excl
1.2 Supply HSQE documentation / program / insurances and any other necessary documentation - does not necessarily include the use of 3rd party online HSQE system - unless agreed		Lump Sum	N/A	\$ 1,800.00
Survey Costs - use lower value if not using our Stormwater Pricing below!!				
1.3 Survey setout - excl S/W		Lump Sum	N/A	\$ 1,400.00
Survey Asbuilt - excl S/W - by Registered Surveyor		Lump Sum	N/A	
Traffic control - excluded by builder		Lump Sum	N/A	by builder
Pothole for Existing Services - 3T & Spotter		hrly	\$195.00	hrly rate
Sub Total				\$ 6,800.00
2.Environmental Control				
2.1 Silt Fence Erection	175	m	\$7.50	\$ 1,312.50
2.2 Temporary entrance shake down's - excl steel grids	1	No	\$2,100.00	\$ 2,100.00
e/o- incl steel grids for job duration	1	No	\$1,900.00	rate only
Sediment Protection to various Pits - during construction - existing		No	\$125.00	rate only
Sediment Protection to various Pits - during construction - proposed		No	\$125.00	by plumber
Dust Suppression - earthwork / pavement rates inclusive of onsite water-cart				incl
Road Sweeping - in the event material tracked onto roads - otherwise POA for daily / weekly undertaking				incl
Wash-down Bay				POA
Temporary / Permenant - Sediment Basin				n/a
BioRetention Basin				n/a
Sub Total				\$ 3,412.50
3. Demolition & Earthworks				
Demolition				
3.1 Saw Cutting (min charge)	1	LS	\$450.00	\$ 450.00
3.2 External Xng removal	1	LS	\$500.00	\$ 500.00
Tree Removal incl Root Structure - PC Sum		LS		by others
Fauna Spotter- PC Sum		LS		by others
Earthworks				
3.3 Remove 100mm topsoil / grass covering to waste - 1330m2 x 100mm	133	m3	\$35.00	\$ 4,655.00
Remove 100mm topsoil / grass covering to stockpile for re-use in Landscape Zones		m2	\$10.00	rate only
3.4 Cut to Waste / Fill	580	m3	\$30.00	\$ 17,400.00
e/o non rippable rock		m3	\$150.00	rate only
Uplift and relay uncontrolled fill under Level One supervision		m3	\$21.00	rate only
Other trades spoil removal - body truck measure		load	\$250.00	rate only
extra-over Remove & Replace soft spots - utilise on-site materials - rate only		m3	\$55.00	rate only
extra-over Remove & Replace soft spots - import - cohesive soil / cleanfill - CBR3+ - rate only		m3	\$65.00	rate only
extra-over Remove & Replace soft spots - import - granular - CBR10+ AP75- rate only		m3	\$80.00	rate only
extra-over Remove & Replace soft spots - import - granular - DTMR - 2.5 - rate only		m3	\$100.00	rate only
3.5 Final Trim & Proof Roll Subgrade - Pad	1250	m2	\$2.00	\$ 2,500.00
Geotechnical				
3.6 Geotech Supervision - Level 1 incl N/D testing - but excluding certification of fill as having a suitable bearing capacity	1	LS	\$1,500.00	\$ 1,500.00
Sub Total				\$27,005.00
Stormwater				
Drainage - trench, supply, bed, lay, cap, joint and backfill concrete RCRRJ pipe incl CCTV				
Sub Total				\$ -
Sewer - By Plumber				
Sewer - trench, supply, bed, lay, cap, joint and backfill hdpe pipe incl , bends, bulk heads, marker posts, surface boxes, pressure testing etc				
Sub Total				\$ -
Water - By Plumber				
Water - trench, supply, bed, lay, cap, joint and backfill hdpe pipe incl , bends, bulk heads, marker posts, surface boxes, pressure testing etc				
Sub Total				\$ -
Site Services - excl by Electrical - Price avalaible upon request				
Services- trench, supply, bed, lay, cap, joint and backfill hdpe pipe incl , bends, bulk heads, marker posts, surface boxes, pressure testing etc				
Sub Total				\$ -
Pavements - Optional				
Supply, lay, grade, compact and compaction test				
Sub Total				\$ -
Detailed Excavations				
Excavate for - All set out by builder				
Footings / Thickening				POA
Sub Total				\$ -
7. Retaining Walls				
Sub Total				\$0.00
Total Contract				\$37,217.50

Customer : CARSBURG CIVIL PTY LTD
Job Site : GARDENS POINT RD, BRISBANE

DOCKET
A04USC

Contractor : CRESCENT EARTHWORX PTY LTD
Equipment : TWIN STEER TANDEM
Rego : XQ84RY

Job Date : 17/12/2021
Order # : 82919-1
Page : 1/1

Description	Load	Quantity	Unit	Start	End	Hours
CONTRACT - SHALE TO 149 DENHAM ST, BRACKEN RIDGE	1	13	M3	7:15 AM	7:59 AM	0:44
	1	13	M3	8:49 AM	10:04 AM	1:14
	1	13	M3	10:45 AM	11:34 AM	0:49
	1	13	M3	12:09 PM	1:02 PM	0:53
	1	13	M3	1:44 PM	2:58 PM	1:14
Total Loads		5				



Signed By : DAVE (SUPERVISOR)
17/12/2021 2:02PM
GARDENS POINT RD, BRISBANE



Signed By : KRIS (OP)
17/12/2021 2:59PM
149 DENHAM ST, BRACKEN RIDGE

Work / Rest Record	12am	1	2	3	4	5	6am	7	8	9	10	11	12pm	1	2	3	4	5	6pm	7	8	9	10	11
Work Hours 0.5 (11:00am-11:30am)																								
Rest Hours 0																								

Pre-Start Check

- ☒ Brakes, steering, gauges, lights, warning devices - lights/alarms/horn.
- ☒ Visibility - Windscreen, wipers, washer, demister, mirrors, windows.
- ☒ Cabin - access/exit, seating, seat belts, loose objects, control levers.
- ☒ Wheels/Tracks, tyres, nuts, damage, wear, pressure (visual).
- ☒ Guards - In place, secure.
- ☒ Hydraulics & Engine - rams, hoses, oil levels, coolant level, leaks, wear.
- ☒ Excessive wear - hooks, chains, pins, pivots, tracks, ground engagement tools.
- ☒ Misc - electrical, fire extinguisher, communications.
- ☒ Performed Manufacturer's Daily Pre-Start / Scheduled Maintenance.
- ☒ The vehicle's seatbelts retract correctly and show no signs of frays, tears or twists in their sash

1. I hold a current drivers licence/permit for the class of vehicle that I will be operating during this shift.
2. I have sufficient driving hours available to perform the task in the time allocated and in accordance with my current Fatigue Management accreditation, and the standards established by the NHVR.
3. I acknowledge that I must take regular rest breaks throughout my shift and that these will be in line with the established fatigue management standards set down by the NHVR. I also agree to document these work/rest times in my Lantrak approved logbook/app.
4. I am fit for duty, to commence work and I will reassess myself regularly throughout this shift for changes in my fitness to continue to work. I agree to stop work immediately if my condition changes and I no longer feel fit to operate a vehicle.
5. I will comply with all posted speed limits and restrictions whilst operating my vehicle and will report to Lantrak any instances where I have been encouraged to speed by others involved the transport process.
6. I advise that I am NOT under the influence of any recreational drugs or alcohol (or have improperly used prescription medication) and will not consume these whilst operating my vehicle.
7. I will ensure that my load is restrained in accordance with the Load Restraint Guide, 3rd Edition 2018, and that the body of my vehicle is kept free of debris, at all times.
8. I understand I have a duty to disclose to my employer immediately if my licence becomes cancelled, suspended or restricted in any way that might affect my capacity to operate a heavy vehicle, and that I must always act in a professional manner and in accordance with current road rules.
9. I am aware of the requirement for operators to wear Personal Protective Equipment whilst working for Lantrak, and agree to wear these items which have been issued to me by my employer.
10. Whilst operating my vehicle, I will comply with the approved Traffic Management Plan, Project Haul Route and Tipping standards that have been established for all work sites.
11. I understand the maximum working limits of my vehicle including its payload limit and gross vehicle mass, and agree to only carry a load which does not exceed the legal GVM limit for my vehicle.

By signing below, I acknowledge and agree to comply with the above statements (1-11) and that all information that I have provided is true and correct.



Operator : MATT MUMFORD

Lantrak Pty Ltd
18 Dansu Court, Hallam, VIC 3803
PO Box 5046, Hallam, VIC 3803
t 139 666 f 03 8796 9699
www.lantrak.com.au
ABN 14 163 639 727

Customer Service Agreement

Sent at 15/12/2021 8:03 PM Page 1/1

Customer : CARSBURG CIVIL PTY LTD	Phone :
Address : 207 ELLIOT ROAD, BANYO, QLD 4014	Mobile : 0417 779 245
Contact : RODNEY CARSBURG	Fax :

Project : GARDENS POINT ROAD	Order No. : 82919-1
Address : GARDENS POINT RD, BRISBANE, QLD	Project Manager : MATTHEW BLAKE
Equipment : TWIN STEER TRIDRIVE	Phone :

PO Number	Description	Date	Capacity	Rate Unit	GST
P/O A-17099	TWIN STEER TRIDRIVE-Cart and Dispose of CLEAN FILL	16/12/21	15	\$10.00 /M3	+GST

Please visit our website www.lantrak.com.au for full terms and conditions.

The Customer retains the Operator for the provision of Services as contained in the terms and conditions which form part of this agreement.	
Customer Signature :	Name :
	Date :
Please sign and return the Customer Service Agreement via fax.	

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Customer : CARSBURG CIVIL PTY LTD	Phone :
Address : 207 ELLIOT ROAD, BANYO, QLD 4014	Mobile : 0417 779 245
Contact : RODNEY CARSBURG	Fax :

Project : GARDENS POINT ROAD	Order No. : 82919-1
Address : GARDENS POINT RD, BRISBANE, QLD	Project Manager : MATTHEW BLAKE
Equipment : SEMI	Phone :

PO Number	Description	Date	Capacity	Rate Unit	GST
	SEMI-Cart and Dispose of TOPSOIL	08/12/21	20	\$13.50 /M3	+GST

Please visit our website www.lantrak.com.au for full terms and conditions.

The Customer retains the Operator for the provision of Services as contained in the terms and conditions which form part of this agreement.	
Customer Signature :	Name :
	Date :
Please sign and return the Customer Service Agreement via fax.	

DWG No.:	DESCRIPTION:
21430-S000	STANDARD NOTES - SHEET 1
21430-S001	STANDARD NOTES - SHEET 2
21430-S100	SITE PLAN
21430-S110	SLAB AND FOOTING DETAILS

THESE DRAWINGS SHALL BE READ TOGETHER WITH ALL OTHER WORKING DRAWINGS AND SPECIFICATIONS. PRECEDENCE IS GIVEN TO DRAWINGS, THESE NOTES, THEN SPECIFICATION. ALL DISCREPANCIES AND VARIATIONS SHALL BE REFERRED TO THE ENGINEER BEFORE PROCEEDING WITH THE WORK. IF IN DOUBT, VERIFY WITH THE RELEVANT PARTY AS NECESSARY.

2. BUILD, FABRICATE AND PROCURE ONLY FROM DRAWINGS "ISSUED FOR CONSTRUCTION"

3. ALL WORK AND MATERIALS MUST BE FIT FOR PURPOSE

4. BEFORE PROCEEDING WITH THE WORK ANY DISCREPANCIES IN THE DRAWINGS ON SITE SHALL BE REFERRED TO THE ENGINEER AS SOON AS THEY ARE NOTICED.

5. WORKS SHALL BE CARRIED OUT IN ACCORDANCE WITH ALL WORKCOVER REQUIREMENTS AND OCCUPATIONAL HEALTH AND SAFETY ACT REGULATIONS. DIMENSIONS ARE IN MILLIMETRES AND LEVELS ARE IN METRES UNLESS NOTED OTHERWISE.

6. SERVICES SHOWN ON DRAWINGS ARE INDICATIVE ONLY. PRIOR TO THE COMMENCEMENT OF CONSTRUCTION WORKS, THE CONTRACTOR IS TO IDENTIFY ALL EXISTING SERVICES. ANY DAMAGES TO THE EXISTING SERVICES ARE TO BE RECTIFIED AT THE CONTRACTOR'S EXPENSE.

7. THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING STABILITY OF THE STRUCTURE DURING CONSTRUCTION AND ENSURING NO PART OF THE STRUCTURE IS OVERSTRESSED DUE TO CONSTRUCTION ACTIVITIES.

8. SETTING OUT DIMENSIONS AND SIZES OF STRUCTURAL MEMBERS SHALL NOT BE OBTAINED BY SCALING THE STRUCTURAL DRAWINGS.

9. **ANY SETTING OUT DIMENSIONS SHOWN ON THE STRUCTURAL DRAWINGS SHALL BE CHECKED BY THE CONTRACTOR BEFORE CONSTRUCTION COMMENCES. START OF WORK MEANS TOTAL ACCEPTANCE OF CONDITIONS**

10. **ALL WORKSMANSHIP AND MATERIALS SHALL BE IN ACCORDANCE WITH THE REQUIREMENTS OF THE CURRENT EDITIONS INCLUDING AMENDMENTS OF THE RELEVANT AUSTRALIAN STANDARDS, CODES OF PRACTICE EXCEPT AS VARYED BY THE CONTRACT DOCUMENTS, AND OF THE BYLAWS OF THE LOCAL AND STATE GOVERNMENT AUTHORITY.**

11. PROVIDE AS-CONSTRUCTED DRAWINGS FOR ALL SERVICES AS REQUESTED BY THE CLIENT.

12. ALL PROPRIETARY PRODUCTS ARE TO BE INSTALLED STRICTLY IN ACCORDANCE WITH MANUFACTURERS PRINTED INSTRUCTIONS UNLESS NOTED OTHERWISE.

13. ALL DISTURBED AREAS NOT SUBJECTED TO NEW WORKS SHALL BE REINSTATED TO THEIR EXISTING CONDITION BY THE CONTRACTOR AT THE COMPLETION OF WORKS TO THE SATISFACTION OF THE RESPONSIBLE AUTHORITY.

14. THE DRAWINGS MAY NOT SHOW ALL DETAILS OF FIXTURES, INSERTS, SLEEVES, OPENINGS ETC. REQUIRED BY THE VARIOUS TRADES AND WILL NEED TO BE CO-ORDINATED AND APPROVED BEFORE PROCEEDING WITH CONSTRUCTION.

15. OPENINGS SHALL NOT BE MADE IN ANY STRUCTURAL MEMBER UNLESS SPECIFICALLY SHOWN ON STRUCTURAL DRAWINGS OR APPROVED BY THE STRUCTURAL ENGINEER

16. A MINIMUM OF 48 HOURS NOTICE IS REQUIRED FOR INSPECTION (U.N.O) ALL WORKS TO BE INSPECTED MUST BE COMPLETED PRIOR TO THE TIME OF INSPECTION.

17. INSPECTIONS DO NOT RELIEVE THE CONTRACTOR OF RESPONSIBILITY FOR THE COMPLETENESS AND CORRECTNESS OF HIS WORKS.

18. **TYPICAL INSPECTION HOLD POINTS INCLUDE BUT NOT LIMITED TO:**

BORED PIERS, FOOTINGS, SLAB ON GROUND, REINFORCED WALLS, BLOCK WORK WALLS, COLUMNS, SUSPENDED SLABS, CONCRETE STAIRS, ROOF AND WALL FRAMING

19. INSPECTIONS WILL BE PERIODIC AND REPRESENTATIVE AND WILL NOT NECESSARILY BE MADE OF ALL WORKS. THE CONTRACTOR IS TO ADVISE THE ENGINEER OF ALL WORK COMPLETION, BUT ELECTION TO INSPECT OR OTHERWISE WILL BE AT THE ENGINEERS DISCRETION. THE CONTRACTOR IS TO ALLOW TIME AND PROVIDE SITE ACCESS FOR THE INSPECTIONS TO TAKE PLACE AND IS TO HAVE A RESPONSIBLE SITE SUPERVISOR AVAILABLE TO RECEIVE ANY COMMENT OR DIRECTION FROM THE INSPECTING PARTY.

20. U.N.O = UNLESS NOTED OTHERWISE

21. V.T.CE = V.T CONSULTING ENGINEERS

22. FLW = FLOOR LOAD WIDTH

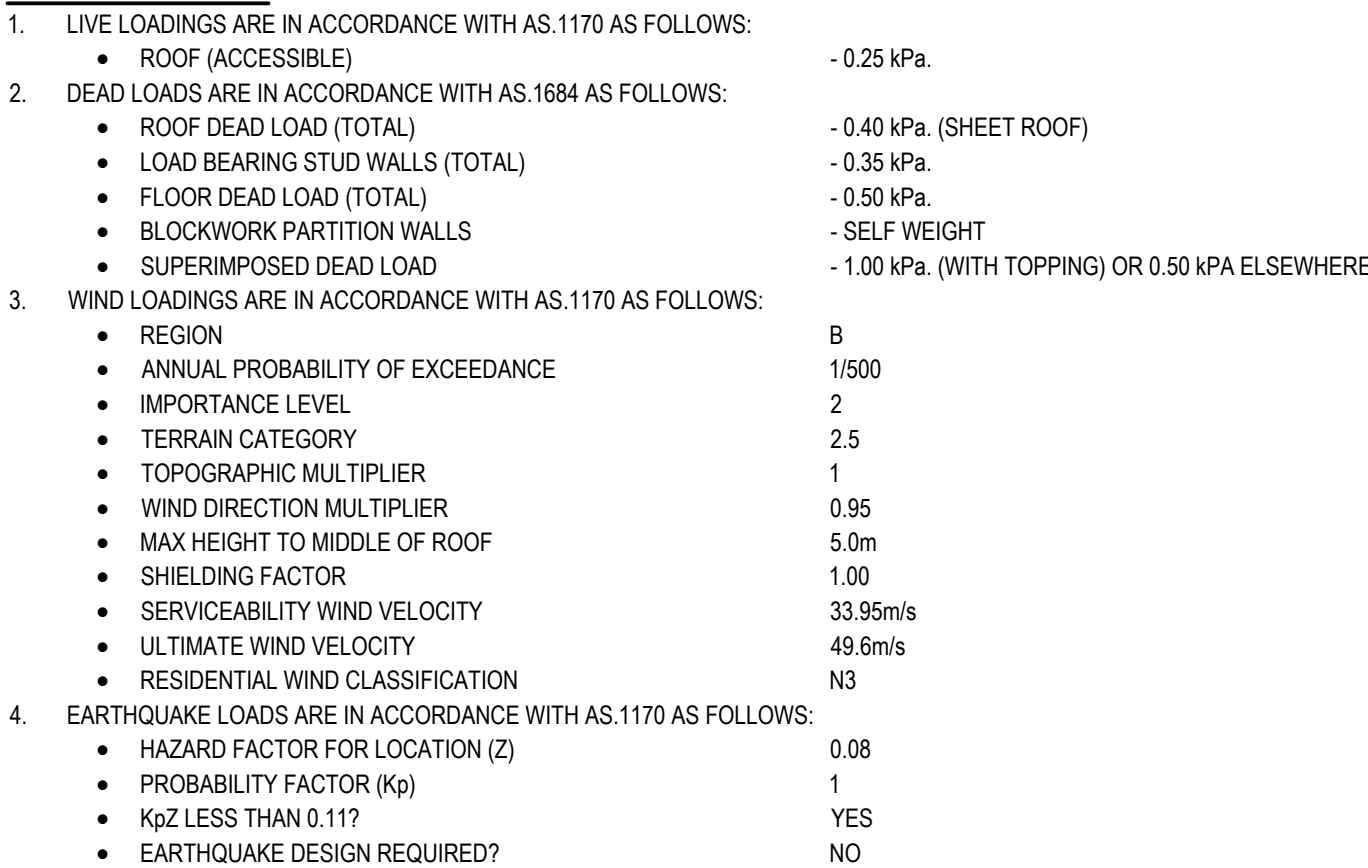
23. RWL = ROOF LOAD WIDTH

24. WLW = WALL LOAD WIDTH

1. FIRE ENGINEER / CERTIFIER TO DETERMINE THE FIRE REQUIREMENTS FOR THE PROPOSED DESIGN PRIOR TO CONSTRUCTION
2. vTCE DO NOT CARRYOUT FIRE ENGINEERING OR DETERMINE FIRE ENGINEERING REQUIREMENTS
3. REGARDLESS, THE FOLLOWING ELEMENTS HAVE BEEN DESIGNED FOR THE FOLLOWING STRUCTURAL ADEQUACY FRL

ALL LOAD BEARING COLUMNS	FRL = 120 (IN MINUTES)
ALL SUSPENDED CONCRETE SLABS	FRL = 120 (IN MINUTES)
ALL LOAD BEARING BLOCK WORK WALLS	FRL = 120 (IN MINUTES)

1. THE BUILDER SHALL IDENTIFY LOCATIONS OF ANY EXISTING SERVICES PRIOR TO CONSTRUCTION
2. DIAL BEFORE YOU DIG TO BE CONTACTED FOR THE LOCATION OF EXISTING PUBLIC UTILITIES PRIOR TO EXCAVATION



1. REMOVE Boulders and Rocks within 100mm of underside of concrete slabs and footings.
2. **ALL earthworks in accordance with AS 3798 guidelines for earthworks on commercial and residential developments**
3. Provide 'level 1' inspection and testing as detailed in AS 3798 where any new filling is required to achieve design levels for support of any slab on-ground slab, pavements, structural components
4. **Remove and replace existing fill so that it is at least compacted to a minimum of 95% standard compaction**
5. **Remove soft spots identified by proof rolling throughout the area of the works with 8 passes of a 12 tonne smooth steel roller (4 passes in two perpendicular directions). Soft spots to be excavated and replaced with min CBR 15 select fill**
6. **Fill is to be inorganic, non-perishable material complying with AS 3798 (min CBR 15 select fill)**
7. **Fill to required levels with approved material in maximum 300mm thick layers. Each layer to be compacted to 95% standard compaction within 2% of optimum moisture content for standard compaction (OMC). Cut surface still needs to be compacted to 95% standard compaction**
8. Promptly cover any exposed clay at sub grade level with a minimum CBR 15 select fill to reduce potential wetting, drying and trafficable problems
9. Carryout density tests as directed on site.
10. Design is based on data from discrete locations as recorded in the geotechnical investigation report. Subsurface conditions shown on drawings is inferred from data in geotechnical investigation report and is given as a guide only. Actual ground conditions may vary from those shown.
11. **Fill is not to be compacted within 500mm of any existing or proposed retaining walls**
9. **Certification (by others) is to be provided that confirms the following as a bare minimum**
 - **Certification that all general earthworks operations (i.e. stripping proof rolling of sub grade, etc) have been carried out in accordance with the earthworks specification**
 - **Certification that fill has been placed and compacted to the required minimum density in accordance with the earthworks specification**
 - **Certification that the controlled fill is suitable for support of conventional high level footings and has a minimum bearing capacity of 100kPa**
 - **Certification that the controlled fill material is suitable to support a conventional slab on ground floor**
 - **Certification that the quality of any imported fill complies with the earthworks specification requirements**
 - **Engineering certification of all earthworks should be provided a registered professional engineer of Queensland**

1. ALL WORKMANSHIP AND MATERIALS SHALL BE IN ACCORDANCE WITH THE CURRENT EDITION OF AS 2870 U.N.O.
2. THE CONTRACTOR IS RESPONSIBLE FOR THE DESIGN AND CERTIFICATION OF A SUITABLE WORKING PLATFORM FOR THE SITE, INCLUDING BUT NOT LIMITED TO CRANES AND MACHINERY.
3. THE CONTRACTOR IS RESPONSIBLE FOR PROVIDE SAFE BATTERS AND EXCAVATIONS.
4. THE FOUNDATIONS DESIGNED UNDER AS 2870 DO NOT GUARANTEE THAT NO MOVEMENT OF THE FOUNDATION WILL OCCUR BUT INSTEAD ENDEAVOR TO LIMIT THE EXPECTED BUILDING MOVEMENT TO ACCEPTABLE LEVELS.
5. DO NOT UNDERMINE EXISTING FOOTINGS.
6. PREVENT FOUNDATIONS DRYING OUT DUE TO EXPOSURE. PLACE BLINDING, FOOTINGS, BORED PIERS AND BACKFILL AS SOON AS PRACTICABLE AFTER EXCAVATION.
7. TERMITE PROTECTION TO BE PROVIDED IN ACCORDANCE WITH THE RELEVANT CODES OF PRACTICE
8. UNDERSLAB TERMITICIDE IRRIGATION SYSTEMS ARE NOT TO BE USED AS THE FOUNDATIONS HAVE NOT BEEN DESIGNED TO ACCOMMODATE THIS CHANGE IN MOISTURE CONDITION
9. ALL EXCAVATIONS SHALL BE KEPT FREE FROM ANY POWDED WATER BEFORE PLACING CONCRETE.
10. A GEOTECHNICAL ENGINEER WILL NEED TO BE ENGAGED TO ENSURE FOOTINGS ARE FOUNDED IN ADEQUATE STRATA AS PER THE DESIGN.
11. DURING CONSTRUCTION ALL DOWN PIPES ARE TO BE CONNECTED TO ROOF WATER DRAINAGE. ROOF WATER IS TO BE COLLECTED AND CHanneled AWAY FROM THE HOUSE
12. ALL PLUMBING ON THIS SITE TO BE ARTICULATED TO ACCOMMODATE POSSIBLE GROUND MOVEMENTS. SEPTIC TANKS IN PARTICULAR WILL REQUIRE CAREFUL DETAILING
13. FOUNDATION DESIGN DOES NOT ACCOUNT FOR ABNORMAL MOISTURE CONDITIONS. I.E. POOR DRAINAGE OR BROKEN PLUMBING

1. ALL WORKMANSHIP AND MATERIALS SHALL BE IN ACCORDANCE WITH THE CURRENT EDITION OF AS 3600, AS 2870 & AS 1379 U.N.O.

2. THE FINISHED CONCRETE SHALL BE A DENSE HOMOGENEOUS MASS, COMPLETELY FILLING THE FORM WORK THOROUGHLY EMBEDDING THE REINFORCEMENT AND FREE OF STONE POCKETS. ALL CONCRETE INCLUDING SLABS ON GROUND AND FOOTINGS SHALL BE COMPACTED THOROUGHLY

3. THE CONCRETE SUPPLIER IS TO UAISE WITH THE CONCRETE TO ENSURE THAT THE FINISHED CONCRETE PRODUCT IS FIT FOR PURPOSE AND ACHIEVES THE REQUIRED STRUCTURAL AND ARCHITECTURAL OUTCOMES

4. PROVIDE THE ENGINEER WITH AT LEAST 24 HOURS NOTICE OF REINFORCEMENT BEING READY FOR INSPECTION. NO CONCRETE IS TO BE POURED WITHOUT THE APPROVAL OF THE ENGINEER.

5. CONCRETE QUALITY (U.N.O.) (TARGET 56 DAY DRY SHRINKAGE STRAIN FOR SLABS AND PAVEMENTS = 600 MICROSTRAIN)

ELEMENT	MAX SIZE AGGREGATE	CONCRETE GRADE	SLUMP
BORED PIERS	20mm	S32 (U.N.O)	180mm
PAD + STRIP FOOTINGS	20mm	N32 (U.N.O)	100mm
RETAINING WALL FOOTINGS	20mm	N32 (U.N.O)	100mm
SLAB ON GROUND	20mm	N32 (U.N.O)	100mm
PAVEMENT (EXTERNAL)	20mm	N32 (U.N.O)	100mm

6. PROVIDE BAR SUPPORTS OR SPACERS TO GIVE THE FOLLOWING CONCRETE COVER TO REINFORCEMENT (OUTSIDE OF STIRRUPS AND TIES), UNLESS NOTED OTHERWISE:

ELEMENT	CLASSIFICATION	MINIMUM CLEAR COVER
BORED PIERS	CONSTRUCTION TOLERANCES	70 (U.N.O)
PAD + STRIP FOOTINGS	A2	50 (U.N.O)
RETAINING WALL FOOTINGS	A1	50 (U.N.O)
RESIDENTIAL RAFT SLAB	A1	30 BOTTOM, 30 TOP + SIDES (U.N.O)
RESIDENTIAL PAVEMENT (EXTERNAL)	A2 (BTM) B1 (TOP)	45 BOTTOM, 40 TOP + SIDES (U.N.O)

(COVER IS CLEAR DISTANCE BETWEEN THE OUTSIDE SURFACE OF STRUCTURAL CONCREAL AND ANY REINFORCEMENT INCLUDING BUT NOT LIMITED TO LIGATURES, HELIX AND THE WIRE) (MAX TOLERANCES ON COVER FOR SUSPENDED BEAMS, SUSPENDED SLABS, COLUMNS AND WALLS ARE BASED ON AS 3600 WHICH ALLOW -5mm OR +10mm)

7. FOR CHAMFERS, DRIP GROOVES, FILLETS, ETC REFER TO ARCHITECTS DETAILS. MAINTAIN MINIMUM COVER TO ALL REINFORCEMENT AT THESE LOCATIONS.

8. THE CONTRACTOR IS TO SEEK APPROVAL FROM THE ENGINEER IN WRITING IF ANY ADMIXTURES ARE TO BE USED IN THE CONCRETE MIX. CALCIUM CHLORIDE WILL NOT BE PERMITTED AND SHALL NOT BE USED UNDER ANY CIRCUMSTANCES

9. NO WATER IS TO BE ADDED TO THE CONCRETE MIX ON SITE UNLESS IT HAS BEEN APPROVED AND SPECIFIED BY THE CONCRETE SUPPLIER. CONCRETE SUPPLIER TO TAKE FULL OWNERSHIP OF THEIR MIX DESIGN AND THEIR TRUCK DRIVERS COMPETENCY.

10. SIZES OF CONCRETE ELEMENTS DO NOT INCLUDE THICKNESS OF APPLIED FINISHES.

11. SLURRY USED TO LUBRICATE CONCRETE PUMP LINES IS NOT TO BE USED IN ANY STRUCTURAL MEMBERS.

12. CONSTRUCTION JOINTS OR POOR BREAKS WHERE NOT SHOWN ON PLANS OR DETAILS SHALL BE LOCATED AND FORMED TO THE APPROVAL OF THE ENGINEER. CONCRETING IS INTENDED TO BE PLACED IN A CONTINUOUS OPERATION.

13. CONSTRUCTION JOINTS SHALL ONLY BE MADE AT APPROVED LOCATIONS. CONSTRUCTION JOINTS TYPICALLY ARE TO BE CONSTRUCTED WITH A SHEAR KEY TO ENGINEER'S DETAIL. SURFACES OF CONCRETE AT ALL CONSTRUCTION JOINTS MUST BE THOROUGHLY MECHANICALLY SCABBLED TO FULLY EXPOSE AGGREGATE IN THE FIRST POUR.

14. NO PENETRATIONS, RECESSES OR CHASES OTHER THAN THOSE SHOWN ON THE STRUCTURAL DRAWINGS SHALL BE MADE IN CONCRETE MEMBERS WITHOUT APPROVAL OF THE ENGINEER.

15. REINFORCEMENT IS PRESENTED DIAGRAMMATICALLY ONLY. IT IS NOT NECESSARILY SHOWN IN TRUE PROJECTION. IF A SPACING IS NOT PROVIDED, SET OUT THE NOMINATED NUMBER OF BARS AT EQUAL SPACING.

16. REINFORCEMENT MUST BE CLEAN, FREE FROM LOOSE MILL SCALE, LOOSE OR FLAKY RUST, OIL, GREASE, MUD OR OTHER NON-METALIC COATINGS WHICH WOULD REDUCE THE BOND BETWEEN THE CONCRETE AND STEEL.

17. AT PENETRATIONS IN SLABS, UNLESS NOTED OTHERWISE, DETAILED REINFORCEMENT MUST NOT BE CUT, BUT INSTEAD SHALL BE GATHERED EQUALLY TO EACH SIDE OF THE PENETRATION (TYPICAL FOR A PENETRATION LESS THAN 250mm) AND EXTRA REINFORCEMENT OF SIMILAR PROPERTIES SHALL BE ADDED TO CLOSE UP THE SPACING WITH SUFFICIENT EXTENSION TO ENSURE ADEQUATE LAP.

18. PROVIDE STANDARD COGS, HOOKS AND BENDS TO AS3600 U.N.O

19. TERMINATE ENDS OF BEAM SHEAR LIGATURES WITH AT LEAST A 135 DEGREE HOOK. PROVIDE FIRST LIGATURE WITHIN 100mm OFF THE FACE OF THE SUPPORT U.N.O.

20. SLAB REINFORCEMENT SHALL EXTEND AT LEAST 65mm ONTO MASONRY SUPPORT WALLS AND 50% OF BOTTOM REINFORCEMENT SHALL BE COGGED TO ACHIEVE ANCHORAGE AT SIMPLY SUPPORTED ENDS

21. SPLICES IN REINFORCEMENT SHALL BE MADE ONLY IN THE POSITIONS SHOWN. WHERE LAP LENGTHS ARE NOT NOMINATED, IN ORDER TO DEVELOP THE FULL STRENGTH OF THE REINFORCEMENT, THE FOLLOWING MINIMUM SPLICE LENGTHS SHALL BE USED:

N10 - 400mm	N20 - 1000mm	N32 - 1900mm
N12 - 500mm	N24 - 1300mm	N36 - 2200mm
N16 - 750mm	N28 - 1600mm	

22. FOR SQUARE OR RECTANGULAR REINFORCING MESH, PROVIDE MINIMUM MESH LAPS SO THAT TWO OUTER MOST WIRES OF ONE SHEET OVER LAP TWO OUTER MOST WIRES OF THE ADJACENT SHEET BY AT LEAST 50mm. THIS DOES NOT APPLY TO TRENCH MESH AS LAPS SHOULD BE TREATED LIKE AN "N" BAR OF SIMILAR CROSS SECTIONAL AREA

23. WELDING OF REINFORCEMENT WILL NOT BE PERMITTED WITHOUT THE APPROVAL OF THE ENGINEER. IF SUCH APPROVAL IS GRANTED, ALL SURFACE RUST MUST BE REMOVED PRIOR TO ANY WELDING TAKING PLACE. WELDING OF REINFORCEMENT MUST COMPLY WITH AS 3600 AND AS/NZS 1554.3 DO NOT WELD REINFORCEMENT WITHIN 125mm OF A BEND.

24. REINFORCEMENT MUST NOT BE CONTINUOUS THROUGH CONTRACTION OR MOVEMENT JOINTS. A BOND BREAKING MATERIAL MUST BE USED BETWEEN CONTACTING SURFACES

25. JOGGLES TO REINFORCEMENT BARS TO AVOID CONGESTION SHALL BE 1 BAR DIAMETER OVER A MINIMUM LENGTH OF 12 BAR DIAMETERS.

26. REINFORCEMENT SYMBOLS:

S	- GRADE 250S HOT ROLLED DEFORMED BAR TO AS/NZS 4671
N	- GRADE 500N HOT ROLLED DEFORMED BAR TO AS/NZS 4671
R	- GRADE 250R HOT ROLLED PLAIN BAR TO AS/NZS 4671
W	- HARD DRAWN PLAIN WIRE GRADE 500 TO AS/NZS 4671
TM	- TRENCH MESH REINFORCING FABRIC GRADE 500 TO AS/NZS 4671
SL	- SQUARE REINFORCING MESH GRADE 500 TO AS/NZS 4671
RL	- RECTANGULAR REINFORCING MESH GRADE 500 TO AS/NZS 4671

THE NUMBER FOLLOWING THESE SYMBOLS IS THE BAR DIAMETER IN MILLIMETRES.

e.g. N12 -200 = 12mm DIAMETER "N" BAR SPACED AT 200 CENTERS

27. CONCRETE TO BE CURED BY SPRAYING WITH AN ALIPHATIC ALCOHOL BARRIER AFTER THE INITIAL FINISHING OPERATION FOLLOWED BY COVERING WITH 0.20mm BLACK POLYETHYLENE SHEETING OR HESSIAN AND KEEP MOIST FOR 7 DAYS. ANY REWORK TO THE SURFACE WILL REQUIRE THE ALIPHATIC ALCOHOL BARRIER TO BE RE-APPLIED. ENSURE THE BLACK POLYETHYLENE SHEETING IS TAPED AND WATER TIGHT AT ALL ENDS TO PREVENT MOISTURE LOSS. THE USE OF ALIPHATIC ALCOHOL IS RECOMMENDED TO PREVENT PREMATURE DRYING OF THE SURFACE PRIOR TO CURING

28. NO CONCRETE TO BE POURED WHEN SITE TEMPERATURE EXCEEDS 35°C OR FALLS BELOW 5°C.

29. DO NOT INSTALL SEALANTS IF EXPECTED MAXIMUM DAILY TEMPERATURE EXCEEDS 30 DEGREES C. ENSURE ALL RECESSES ARE CLEAN AND DRY PRIOR TO INSTALLING FILLERS OR SEALANTS AND PREPARE IN ACCORDANCE WITH THE MANUFACTURERS PRINTED INSTRUCTIONS.

30. CONDUITS, PIPES, ETC. SHALL ONLY BE LOCATED IN THE MIDDLE ONE THIRD OF A SLAB OR BEAM DEPTH AND SPACED AT NOT LESS THAN 3 DIAMETERS.

31. THE REINFORCEMENT STEEL SUPPLIER MUST BE CERTIFIED BY ACS (AUSTRALIAN STANDARDS CERTIFICATION & VERIFICATION OF REINFORCING, PRE-STRESSING AND STRUCTURAL STEELS) AND COMPLY WITH WITH AS/NZS 4671 FOR THE SUPPLY OF REINFORCEMENT STEEL. CURRENT ACS CERTIFICATION CERTIFICATES ARE TO BE ISSUED TO VICE PRIOR TO DELIVERY OF REINFORCING STEEL TO SITE. REFER www.steelcertification.com FOR CURRENT CERTIFICATE HOLDERS.
32. ALL REINFORCEMENT TO BE SECURELY TIED PRIOR TO PLACEMENT OF CONCRETE.
33. PLACE SUFFICIENT BAR CHAIRS UNDER MAIN BOTTOM REINFORCING BARS AND TOP CROSS BARS IN SLABS TO ALLOW THEM TO BE SUPPORTED IN THEIR CORRECT POSITIONS DURING CONCRETE PLACEMENT (BAR CHAIRS NOT TO BE SPACED ON A GRID GREATER THAN 900 x 900 mm).
34. ENSURE ALL LAID REINFORCING BARS ARE RESTRAINED BEFORE STOPPING WORK TO PREVENT BARS ROLLING UNDERFOOT
35. CAP STARTER BARS AND ENDS OF REINFORCEMENT TO REDUCE RISK OF INJURY
36. TURN ENDS OF THE WIRE AWAY FROM THE CONCRETE COVER ZONE AND REMOVE SURPLUS AND OFF-CUTS
37. ALL CONCRETE, REGARDLESS OF THE TYPE OF ELEMENT, MUST BE COMPACTED DURING PLACEMENT TO AVOID ANY SEGREGATION
38. FORM WORK IS TO BE IN ACCORDANCE WITH AS 3610 EXCEPT WHERE SPECIFIED OTHERWISE. SURFACE FINISH OF CONCRETE EXPOSED TO VIEW IN THE FINAL PROJECT IS TO BE CLASS 3 FINISH AND CLASS 5 FINISH ELSEWHERE.
39. REVIEW LOCATION OF EMBEDDED ITEMS TO MINIMISE POSSIBLE ZONES OF FLOOR COMPACTION.
40. CONDUITS AND CABLES TO BE LOCATED UNDER TOP REINFORCEMENT AND IN THE MIDDLE THIRD OF SLABS ONLY
41. KEEP AN UPDATED RECORD OF SLUMP AND COMPRESSION TESTING AT ALL TIMES AND PROVIDE TO THE SUPERINTENDENT OR ENGINEER AT THEIR REQUEST. MINIMUM TEST RESULTS OF MIX DESIGN TARGETS, INCLUDING BUT NOT LIMITED TO: 3, 7, 28 AND 90 DAY COMPRESSION STRENGTHS.
42. PROVIDE UPWARD CAMBER OF L/200 IN FORM WORK AT CANTILEVERS WHERE L IS THE CANTILEVER PROJECTING BEYOND A COLUMN OR WALL SUPPORT. MAINTAIN THE SLAB AND BEAM DEPTHS AS NOMINATED.
43. DEPTHS OF BEAMS ARE GIVEN FIRST AND TYPICALLY INCLUDE SLAB THICKNESS UNLESS NOTED OTHERWISE.
44. FORMWORK SHALL NOT BE STRIPPED UNTIL THE MINIMUM FOLLOWING NUMBER OF DAYS
BEAM SIDE, VERTICAL WALLS, COLUMNS- 3 DAYS
SLABS, BEAM SOFFITS- 8 DAYS
45. UNLESS PROOF OF 28 DAY STRENGTH HAS BEEN ACHIEVED PRIOR, ALL SUSPENDED SLABS AND BEAMS SHALL REMAIN PROPPED UNTIL THE MINIMUM FOLLOWING NUMBER OF DAYS
SLABS - 28 DAYS
BEAMS - 28 DAYS
46. ALL CHEMICAL/ EPOXY ANCHORS NOMINATED FOR HOLDING DOWN BOLTS OR SIMILAR ARE TO BE RAMSET STRUCTASET 401 WITH GRADE 5 CARBON STEEL BOLTS U.N.O.
47. ENSURE HOLES FOR CHEMICALLY ANCHORED HOLDING DOWN BOLTS OR FIXINGS ARE DRY AND CLEANED THOROUGHLY BEFORE ANY ADHESIVE IS INSTALLED. THREADED ROD TO BE DEGREASED AND ANY FLAKY RUST REMOVED. WIRE BRUSH HOLES AND BLOW OUT WITH COMPRESSED AIR TO REMOVE DUST. FILL HOLE WITH EPOXY FROM A CAULKING GUN FROM BOTTOM OF HOLE OUTWARDS. DISCARD EPOXY FROM FIRST PULL OF TRIGGER. ROTATE THE THREADED ROD WHILE INSERTING AND PUSH FULLY INTO THE HOLE. AVOID ALL DISTURBANCE DURING CURING.
48. ALL CHEMICAL/ EPOXY ANCHORS NOMINATED FOR REINFORCEMENT ARE TO BE RAMSET REO 502 U.N.O.
49. ENSURE HOLES FOR CHEMICALLY ANCHORED REINFORCING BARS ARE DRY AND CLEANED THOROUGHLY BEFORE ANY ADHESIVE IS INSTALLED. BARS TO BE DEGREASED AND ANY FLAKY RUST REMOVED. WIRE BRUSH HOLES AND BLOW OUT WITH COMPRESSED AIR TO REMOVE DUST. FILL HOLE WITH EPOXY FROM A CAULKING GUN FROM BOTTOM OF HOLE OUTWARDS. DISCARD EPOXY FROM FIRST PULL OF TRIGGER. ROTATE THE BAR WHILE INSERTING AND PUSH FULLY INTO THE HOLE. AVOID ALL DISTURBANCE DURING CURING.
50. FOR CHAMFERS, DRIP GROOVES FILLETS, ETC REFER TO ARCHITECTS DETAILS. MAINTAIN MINIMUM COVER TO REINFORCEMENT AT THESE LOCATIONS.

1. THE BUILDING OWNER AND ALL FUTURE OWNERS ARE RESPONSIBLE FOR THE MAINTENANCE OF THE SITE AND SHOULD BE FAMILIAR WITH THE PERFORMANCE AND MAINTENANCE REQUIREMENTS OF CSIRO NUMBER BT18 "FOUNDATION MAINTENANCE AND FOOTING PERFORMANCE: A HOME OWNERS GUIDE"
2. IT IS IMPORTANT THAT THE CONTRACTOR INFORM THE BUILDING OWNER OF THE MAINTENANCE ISSUES ASSOCIATED WITH ENSURING THE LONG TERM PERFORMANCE OF THE FOOTING SYSTEM
3. THE SOIL IS TO BE PROTECTED FROM BECOMING EXTREMELY WET BY PROVIDING ADEQUATE ATTENTION TO SITE DRAINAGE AND PROMPT REPAIRS TO PLUMBING LEAKS. IN ABSENCE OF A CONCRETE PATH DIRECTLY ADJACENT TO THE FOOTING, PROVIDE AT LEAST A 50mm FALL AWAY FROM THE EDGE OF THE FOOTING FOR THE FIRST 1 METER AND SHAPE THE GROUND TO PREVENT PONDING OF WATER.
4. AVOID LOCATING GARDEN BEDS DIRECTLY ADJACENT TO FOOTING EDGE BEAMS
5. ANY FUTURE PERIMETER FOOTPATHS OR PAVEMENT SLABS THAT NOT LEADING TO A DOORWAY MUST BE FREE TO ARTICULATE AND NOT BE CONNECTED TO THE FOOTINGS THAT RUN PARALLEL. THIS IS TO LIMIT THE SURFACE AREA OF SOIL THAT COULD UNDERGO HEAVE ADJACENT TO AN EDGE BEAM

[illegible]

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Pre – Work Requirements

In order to assist the company in fulfilling its legal obligations under the *QLD Work Health and Safety Act 2011* and *Regulation 2011*, and relevant subordinate legislation, and to ultimately ensure worker safety, Carsburg Earthmoving must consult with the Contracting Party (prior to work commencing), in relation to certain on site safety issues/provisions.

Information to be obtained from Contracting Party:

Prior to commencing on-site work activities, a Carsburg Earthmoving representative (e.g. Manager / Supervisor or designated worker/operator etc.) (where relevant), is to ensure that the following information is obtained from the Contracting Party.

All Work:

1. Information regarding overhead powerlines and other overhead obstructions.
2. Relevant WH&S Management Plans / Safe Work Method Statements (SWMS) developed by the Contracting Party.
3. Any specific hazards relating to the work to be undertaken by Carsburg workers/operators.
4. Provisions for public protection and falling object protection.

Excavation Work:

1. Prescribed information (e.g. map(s)), regarding all underground services present at the work site (e.g. underground electrical cables, gas pipelines, telecommunications lines, water pipes etc.). This information is to include:
 - (a) location of the service; and
 - (b) type of service; and
 - (c) depth of service; and
 - (d) for an electrical service – whether the service is or is not live; and
 - (e) the restrictions to be followed in doing the work.

Demolition Work:

1. Demolition Work plan(s)/ SWMS developed by the Responsible/Contracting Party.
2. Proof that the Responsible/Contracting Party holds the appropriate Demolition Certificate.

Information to be provided to Contracting Party:

When requested, Carsburg is to ensure that the Contracting Party is provided with a copy of the Carsburg Earthmoving Health and Safety Plan, and any other relevant information prior to work commencing (where applicable).

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Fax: 07 3267 8352

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QLD Work Health & Safety Act 2011, Part 2
QLD Work Health & Safety Regulation 2011, Chapter 6
QLD Electrical Safety Act, 2002
QLD Electrical Safety Regulation, 2002

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Ph: 07 3267 8033 ALL HOURS

Fax: 07 3267 8352

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Project Risk Identification

Following is a **Risk Identification Checklist** that is to be filled out prior to the project or site work activity. This list highlights what types of activities are to be undertaken and whether specific hazards may be encountered by Carsburg personnel. Where standard work procedures/Safe Work Method Statements are adopted, these are contained within section **CS:09** of this plan. Note: The 'Risk' and 'Resultant Risk' within the Checklist is to be assessed through the use of the **Risk Matrix** shown after this checklist. Resultant Risk is the risk following the implementation of standard procedures and/or site controls.

Where standard Safe Work Method Statements do not adequately address the specific work to be undertaken, a **Job Safety Analysis** will be undertaken for the specific activity(s).

All Carsburg personnel undertaking work on this project have been inducted into:

- the project specific information relating to this site
- specific JSAs developed for the work activities to be performed, and
- the company's Safe Work Method Statements.

Details of those Carsburg personnel who have undertaken specific training or have a certificate of competency are listed in the *Training & Competency Register* refer *Appendix B*.

Details of hazardous substances to be used on site by Carsburg personnel and the relevant Safety Data Sheets are listed in the *Hazardous Substances Register*, refer to *Appendix C*.

Details of plant and equipment to be used in the scope of Carsburg's activities are listed in the *Plant & Equipment Register*, refer to *Appendix D*.

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Risk Identification Checklist

Activity	Hazards	Risk	Applicable		Controls		
			Yes	N/A	Adopt Standard Procedures	Additional Site Controls Required	Resultant Risk
General Work on Site	☛ Effects of UV Radiation ☛ Exposure to Excessive Noise ☛ Manual Handling ☛ Falling Objects	Moderate-High			Yes ☒ or No ☐	No ☐ Yes ☐ See below	
					(SWMS: 01)	☛ ☛	
Manual Handling & Movement of Materials on site.	☛ Excessive, Bulky or Unstable Loads ☛ Falling Objects ☛ Slip, Trip and Fall Hazards ☛ Poor Lifting Postures	Moderate-High			Yes ☒ or No ☐	No ☐ Yes ☐ See below	
					(SWMS: 02)	☛ ☛	
Undertaking work in Public Access Areas.	☛ Projectiles ☛ Slips, Trips, Falls ☛ Vehicle and Mobile Plant Hazards ☛ Falling Objects	High			Yes ☒ or No ☐	No ☐ Yes ☐ See below	
					(SWMS: 03)	☛ ☛	
Undertaking work near Live Electrical Installations	☛ Contact with Overhead Powerlines ☛ Contact with Live Underground Services	High			Yes ☒ or No ☐	No ☐ Yes ☐ See below	
					(SWMS: 04)	☛ ☛	
Operating Mobile Plant on Site (General)	☛ Faulty Plant / Equipment ☛ Non-Competent Operators ☛ Roll-over ☛ Inappropriate Access ☛ Contact with Utility Services,	High			Yes ☒ or No ☐	No ☐ Yes ☐ See below	
					(SWMS: 05)	☛ ☛	

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	Scaffolding, Plant etc Striking worker/pedestrian Contact with Exposed Moving Parts						
Operating Trucks	Roll-over Falling objects Excessive loading Striking worker/pedestrian Contact with utility services, scaffolding etc	High			Yes ☒ or No ☐	No ☐ Yes ☐ See below	
					(SWMS: 06)		
Activity	Hazards	Risk	Applicable		Controls		
			Yes	N/A	Adopt Standard Procedure	Additional Site Controls Required	Resultant Risk
Operating Excavators &/or Backhoes	Roll-over Falling debris/objects Contact with utility services, scaffolding etc Striking worker/pedestrian Exposure to excessive noise	High			Yes ☒ or No ☐	No ☐ Yes ☐ See below	
					(SWMS: 07)		
Operating Front-End Loaders, Bobcats & Drotts	Roll-over Falling debris/objects Contact with utility services, scaffolding etc Striking worker/pedestrian Exposure to excessive noise	High			Yes ☒ or No ☐	No ☐ Yes ☐ See below	
					(SWMS: 08)		
Operating Crawler	Roll-over	High			Yes ☒ or No ☐	No ☐ Yes ☐ See below	

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Tractors (Dozers)	- Falling debris/objects - Contact with utility services, scaffolding etc - Striking worker/pedestrian - Exposure to excessive noise				(SWMS: 09)		
Performing Excavation & Trenching Work	- Trench Collapse - Falling Objects & People - Contact with Underground Services - Unsafe Atmospheres - Reducing Stability of Nearby Structures	High			Yes ☒ or No ☐	No ☐ Yes ☐ See below	
					(SWMS: 10)		
Performing Minor Demolition Activities	- Collapse of structures - Falling objects - Flying particles/materials - Exposure to asbestos - Contact with services	High			Yes ☒ or No ☐	No ☐ Yes ☐ See below	
					(SWMS: 11)		

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Activity	Hazards	Risk	Applicable		Controls		
			Yes	N/A	Adopt Standard Procedure	Additional Site Controls Required	Resultant Risk
Working Near Vehicles & Moving Mobile Plant	- Vehicle contact with other vehicles - Vehicle contact with personnel/pedestrians - Excessive noise - Projectiles - Dust, fumes	High			Yes ☒ or No ☐	No ☐ Yes ☐ See below	
					(SWMS: 12)		
Loading & Unloading Plant on Site	- Plant contact with other plant / vehicles - Vehicle contact with personnel/pedestrians - Falling objects	High			Yes ☒ or No ☐	No ☐ Yes ☐ See below	
					(SWMS: 13)		
Working Outdoors	- Exposure to solar UV radiation - Exposure to extreme temperatures	Moderate			Yes ☒ or No ☐	No ☐ Yes ☐ See below	
					(SWMS: 14)		
Undertaking Work Activities which Generate Excessive Noise	Exposure to excessive noise	Moderate			Yes ☒ or No ☐	No ☐ Yes ☐ See below	
					(SWMS: 15)		
Using Posthole	Contact with underground	High			Yes ☒ or No ☐	No ☐ Yes ☐ See below	

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Fax: 07 3267 8352

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Diggers	Services ☛ Contact with moving parts/ entanglement ☛ Slips, trips, fall				(SWMS: 16)	☛ ☛	
Housekeeping / Cleaning	☛ Slips, trips, falls ☛ Manual handling	Moderate			Yes ☒ or No ☐	No ☐ Yes ☐ See below	
					(SWMS: 17)	☛ ☛	

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Site Specific Activities and JSAs

Activity	Hazards	Risk	Applicable	Controls	
			Yes	Specific JSA Required	Resultant Risk
				Yes ☐ See JSA No.____	
				Yes ☐ See JSA No.____	
				Yes ☐ See JSA No.____	
				Yes ☐ See JSA No.____	
				Yes ☐ See JSA No.____	
				Yes ☐ See JSA No.____	

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				Yes ☐ See JSA No. ____	
				Yes ☐ See JSA No. ____	

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Risk Matrix

- A. Identify potential hazards associated with the activity through the use of the Risk Identification Checklist (Above)
- B. Perform a risk assessment for each hazard identified by:
 - (i) Determining the consequences (refer Table 1);
 - (ii) Determining the probability of the event occurring (refer Table 2);
 - (iii) Apply the values obtained from Tables 1 & 2 to the Qualitative Risk Matrix (Table 3) to obtain the resultant Risk Score and Level.

TABLE 1 – CONSEQUENCE TABLE

Given that the event occurs, what is the likely outcome?

LEVEL	DESCRIPTOR	CONSEQUENCE
1	Insignificant	No injury
2	Minor	First Aid treatment
3	Moderate	Medical treatment required
4	Serious	Extensive injuries
5	Disaster	Death

TABLE 2 – LIKELYHOOD TABLE

How likely is it that the event will occur?

LEVEL	DESCRIPTOR	DESCRIPTION
1	Rare	The event may occur only in exceptional circumstances
2	Unlikely	The event may occur at some stage
3	Likely	The event should occur at some stage
4	Very Likely	Event will probably occur in most circumstances
5	Almost Certain	Event expected to occur in most circumstances

TABLE 3 – QUALITATIVE RISK ASSESSMENT MATRIX

PROBABILITY	CONSEQUENCE				
	1 Insignificant	2 Minor	3 Moderate	4 Serious	5 Disaster
1 Rare	1	3	6	10	15

RISK LEVEL

	High Class 1 (18 - 25)
	Significant Class 2 (10 - 17)

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2 Unlikely	2	5	9	14	19		Moderate Class 2	(6 - 9)
3 Moderate	4	8	13	18	22		Low Risk Class 3	(1 - 5)
4 Likely	7	12	17	21	24			
5 Almost Certain	11	16	20	23	25			

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Scope of Work

Detailed excavation work to suit project requirements.

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Site Emergency Provisions

Emergency Contacts

FIRST AID		
Carsburg First Aider	Name: Neil Carsburg	Contact: 07) 3267 8033
First Aid Kit(s):	Location: Office	
EMERGENCY RESPONSE		
Emergency	Phone: 000	
Closest Medical Centre "Banyo Clinic"	Phone: 07) 3267 6842 Street Directory Ref No.: Address: 183 Tufnell Rd, Banyo	
Police	Phone: 000 Police Station: 07) 3276 6842 Address: 21 Royal Pde, Banyo	
Fire and/or Rescue Authority	Phone: 000 Address: 550 Hamilton Rd, Chermside Qld	
Carsburg Manager	Name: Neil Carsburg Phone: 07) 3267 8033	
Carsburg Supervisor	Name: <i>Neil Carsburg</i> Phone: 07) 3267 8033	
Carsburg Safety Rep	Name: Neil Carsburg Phone: 07) 3267 8033	
Once all emergency calls have been made, the incident must be reported to the relevant supervisors/managers as soon as possible if this has not already been done. The following authorities may also need to be contacted:		
OTHER AUTHORITIES		

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Workplace Health & Safety QLD
(WHSQ)

Phone: 1300 369 915

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Evacuation Plan

1. Upon first discovery of a fire, bomb or threatening situation, the Carsburg Supervisor, and/or a representative of the Principal Contractor is to be notified immediately.
2. Site specific emergency and evacuation rules established by the Principal Contractor are to be followed at all times by Carsburg personnel.
3. Specific Carsburg personnel contact details and additional emergency and first aid contacts are shown in the previous Emergency Contacts List. These contacts are to be notified as deemed necessary during an emergency.
4. Where deemed appropriate, the Carsburg Supervisor is to instigate an evacuation of the project.
5. All personnel are to be encouraged to remain calm and orderly.
6. Plant and equipment is to be shut down and workers are not to go back for valuables or tools.
7. Workers are to follow designated routes and assemble as per the Principal Contractor's requirements and/or site diagram below.
8. Workers are to report to the Site Foreman or Principal Contractor representative once clear of the site during an emergency.
9. Carsburg is to ensure that the relevant fire fighting equipment, depending on the substances stored on site and their locations and the work activities undertaken are maintained within the site or other relevant area.

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PS:05

Project Specific Record Keeping

Following is a list of Registers, Forms and Checklists that Carsburg will need to maintain as part of activities undertaken for their various projects. They include:

1. *Training & Competency Register*
2. *Hazardous Chemical Register*
3. *Plant & Equipment Register*
4. *Plant & Equipment Checklist*
5. *Incident/Accident Report Form*
6. *Safe Work Method Statement / Job Safety Analysis Template*
7. *Task Observation Sheet*

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Appendix A – <SPARE>

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Appendix B - Training and Competency Register

Employee Name	Company General Induction (✓ or ✗)	Carsburg H&S Manual Induction (✓ or ✗)	MSDS Risk Assessment (✓ or ✗)	Operator Assessment Training (✓ or ✗)	Date	Signature
Schreyer, Peter						
Andrews, Adam						
Bate, David						
Griep, Daniel						
Woodbury, Kevin						
Wilcock, Darren						
Lewis, Stephen						
Turnbull, Ash						
Knight, Lawrence						
Kittle, Clinton						
Treacy, Bruce						
Mann, Michael						
Bruyn, Sean						

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Page, Peter						
Peters, Nathan						
Thorpe, Callum						
Reeve, David						
Rose, Robert						
Newick, Paul						
Flaherty, Josh						
Moors, Kidd						
Webber, Shaun						
Mulcahy, James						
Yaxley, Pat						
SUBCONTRACTORS						
McDonnel, Sean						
Rook, David						
Houldsworth, Jimb						
Devine, Troy						
Davis, Craig						

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Date: 30/11/2021

Job Address: 60A Gardens Point Rd, Brisbane City

Martin, Peter						
Bogert, Ricky						
Dalamaras, Paul						
Reese, Steve						

Training of Carsburg Induction and WH & S Plan, Conducted by: NEIL CARSBURG

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Appendix C – Hazardous Chemical Register

Chemical Name	MSDS Held On Site (Yes / No)	Specific Storage Requirements (Yes / No) Give Details if Yes	General Safety Requirements (Handling, PPE, etc.)
Automotive Diesel Fuel	Yes	Yes – If using storage containers on site: Store in a cool, dry, well-ventilated area away from sources of ignition, oxidising agents, strong acids, foodstuffs and clothing.	Use only in a well ventilated area. Keep containers sealed when not in use. Prevent the build up of mists or vapours in the work atmosphere. Avoid inhalation of vapours and mists and skin or eye contact. Do not use near ignition sources. Do not pressurise, cut, heat or weld containers as they may contain hazardous residues. Maintain high standards of personal hygiene i.e Washing hands prior to eating, drinking, smoking or using toilet facilities. If required, use safety glasses or face shields to avoid eye contact. The use of gloves may be necessary in certain applications. Assess the situation and administer if required.

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[illegible]

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Appendix D - Plant & Equipment Register

[illegible]

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[illegible]

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Appendix E – Plant & Equipment Checklist

Week Start Date: / / **Machine:** **Unit No:** **Hours Wk START:**

Operator: **Serial No.** **Hours Wk END:**

(Place a tick in the appropriate column once each item is checked / completed)

Daily Checks	Sun	Mon	Tues	Wed	Thur	Fri	Sat
1. Check Equipment for Leaks & Cracks etc.							
2. Check Tyres							
3. Check Engine Oil Level							
4. Check Radiator / Coolant Level							
5. Check Fuel Level							
6. Check Air Cleaner							
7. Check Quick Hitch							
8. Grease							
9. Check Bucket Teeth							
10. Hose Down							
11. Check Hydraulic tank							
12. Drain Air Tanks							
13. Check Two Way Radio is Activated							

Fire Ant Checks (Daily)

1. Visually Check Machine & Truck Before Leaving Depot							
2. Clean & Inspect Machine & Truck Before Leaving Site							

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Weekly Checks

1. Check Battery Water Level							
2. Check for Loose Grousers							
3. Check Engine Belts							
4. Wash Machine / Truck							
5. Check Wheel nuts							

Monthly Checks

1. Grease Trucks							
2. Check Tyre Pressure							
3. Clean Belly Guards							
4. Adjust Brakes							

Other: _____

Workshop Details: _____

Operator Signature: _____ **Date:** ____ / ____ / ____

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Appendix F – Incident/Accident Report

Employee Name: _____

Date of incident: _____

Customer Name: _____

Site/Accident address: _____

This report must be filled in and handed to the Carsburg Manager within 24 hours of an Incident. This report is to record additional information not contained on the statutory incident reporting form that must also be out for notifiable incidents.

Location of Incident: _____ Time: _____

Name of Injured worker: _____

Estimated Incapacitated Work Days: _____

Injury: _____

Treatment of Injury: _____

Incident: _____

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Treatment of Injury: _____

Describe how to incident happened (what started the sequence events, the sequence of events, the final thing that happened)

What factors do you believe contributed to the incident?

1. _____
2. _____
3. _____
4. _____
5. _____

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Property Damage:

Yes ☐ No ☐ Owner ☐

Description of Damage:

Workers involved were:

Qualified to undertake work

Yes ☐ No ☐

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Adequately supervised Yes ☐ No ☐

Provided with documented work procedures Yes ☐ No ☐

Other: _____

Work Environment was:

Clean Yes ☐ No ☐

Adequately Lit Yes ☐ No ☐

Well Ventilated Yes ☐ No ☐

A Confined Area Yes ☐ No ☐

Uncluttered Yes ☐ No ☐

Other: _____

Names of Witness to the Accident/Incident

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_____ Phone: _____ Statement Taken: Yes / No

_____ Phone: _____ Statement Taken: Yes / No

Were Photographs taken: Yes ☐ No ☐

Action taken to Prevent Recurrence

1. _____
2. _____
3. _____
4. _____

Action Completed Signature: _____ **Date:** __/__/__

Manager

Supervisor

Other (Where necessary)

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Date: 30/11/2021

Job Address: 60A Gardens Point Rd, Brisbane City

Other Comments:

Appendix G – Safe Work Method Statement (SWMS) / Job Safety Analysis (JSA) Template

SWMS:XX

<INSERT TITLE>

Contractor/Client:

Project/Site:

Analysis Completed By: _____ **Reviewed/Approved By:** _____ **Date:** _____

Sequence of basic job steps	Hazards	Potential Risk			Recommended action or procedure	By whom	Resultant Risk		
		L	C	R			L	C	R

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SWMS:XX	<INSERT TITLE>
----------------	-----------------------------

Sequence of basic job steps	Hazards	Potential Risk			Recommended action or procedure	By whom	Resultant Risk		
		L	C	R			L	C	R

Implementation and Monitoring

Carsburg & Subcontracted Personnel -
Carsburg Manager / Supervisor -

Follow procedure, and report inconsistencies
Monitor procedural requirements on site using the Task Observation Form

References:

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Appendix H – Task Observation Sheet

Project Name: _____ Date: ____ / ____ / ____

Observer: _____

Task being observed: _____

Name of relevant SWMS: _____

WORKERS OBSERVED UNDERTAKING THE TASK:

Name	Position / Role

TASK SWMS COMPLIANCE

Item	Information	Compliance (Y / N)
1	Is the SWMS task specific? Comments:	
2	Have the workers been inducted into and signed onto the SWMS? Comments:	
3	Does the SWMS adequately describe the sequence of basic job steps? Comments:	
4	Are the controls (as specified by the SWMS) being followed? Comments:	
5	Were any additional hazards identified? Comments:	
6	Are the controls in the SWMS adequate? Comments:	
7	Other? Comments:	

ACTION & RECOMMENDATIONS / FOLLOW UP

Item No.	Action / Recommendation	Date Closed

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COMMENTS

 ABN: 66 631 834 903	ITP No. 0000-ITP-EXC-01	INSPECTION AND TESTING PLAN
	Project: QUT Open Air Sports Court	Excavation

References:	Project specification and drawings	Prepared by:	V Hemsley	Date Prepared:	30/11/2021
Lot Location:	60A Gardens Point Rd, Brisbane City	Approved by:	N Carsburg	Date Approved:	30/11/2021

Item No	Check Item	Description	Check	Witness Point	Hold Point	Conforming
1.	Check Item	Has Dial Before You Dig Plans been received? Before any work can commence DBYD plan must be obtained and be onsite.				
2.	Check Item	"For Construction" Plans to be available. Prior to commencing work the "For Construction" plans must be onsite.				
3.	Check item	Set out of excavation extents. The extent of all excavations should be set out prior to any works being undertaken				
4.	Test item	The Bottom of Excavation has reached its final level? The final level of the excavation to be within tolerance. Vertical Tolerance +0/-25mm Crossfall Tolerance +12/-12mm over 3m				
5.	Hold Point	Has sub-grade been Inspected? It is a requirement that the sub-grade be inspected prior to any material being placed on the Sub-grade. The Principal will advise of any sub-grade treatment required. This is a Hold Point to be released by the Superintendent				

Lot Verification & Conformance - All conformance data including survey, materials and construction completed and attached. Any NCR's rectified and closed.

Contractors Representative

Date

Clients Representative

Date

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Developed by Site-Safe Health Safety & Risk Management Consultants Pty Ltd

Reviewed By: Neil Carsburg (Managing Director)

Reviewed/Approved By:  **Date:** 7/07/2021

Emergency Contact – Neil Carsburg ph. 3267 8033

Employee consulted & involved in development of SWMS: Sean Ngatoko

Risk Matrix

- A. Identify potential hazards associated with the activity through the use of the Risk Identification Checklist (Above)
- B. Perform a risk assessment for each hazard identified by:
 - (i) Determining the consequences (refer Table 1);
 - (ii) Determining the probability of the event occurring (refer Table 2);
 - (iii) Apply the values obtained from Tables 1 & 2 to the Qualitative Risk Matrix (Table 3) to obtain the resultant Risk Score and Level.

TABLE 1 – CONSEQUENCE TABLE

Given that the event occurs, what is the likely outcome?

LEVEL	DESCRIPTOR	CONSEQUENCE
1	Insignificant	No injury
2	Minor	First Aid treatment
3	Moderate	Medical treatment required
4	Serious	Extensive injuries
5	Disaster	Death

TABLE 2 – LIKELYHOOD TABLE

How likely is it that the event will occur?

LEVEL	DESCRIPTOR	DESCRIPTION
1	Rare	The event may occur only in exceptional circumstances
2	Unlikely	The event may occur at some stage
3	Moderate	The event should occur at some stage
4	Likely	Event will probably occur in most circumstances
5	Almost Certain	Event expected to occur in most circumstances

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TABLE 3 – QUALITATIVE RISK ASSESSMENT MATRIX					
PROBABILITY	CONSEQUENCE				
	1 Insignificant	2 Minor	3 Moderate	4 Serious	5 Disaster
1. Rare	1	3	6	10	15
2. Unlikely	2	5	9	14	19
3. Moderate	4	8	13	18	22
4. Likely	7	12	17	21	24

RISK LEVEL		
	High Class 1	(18 - 25)
	Significant Class 2	(10 - 17)
	Moderate Class 2	(6 - 9)
	Low Risk Class 3	(1 - 5)

TABLE 4 - DETERMINE THE ACTION REQUIRED

RISK RATE	ACTION REQUIRED
High Class 1 (18-25)	Urgent – Stop the task or Activity and make safe Senior Management decision required before the Task or Activity can recommence
Significant Class 2 (10 - 17)	Seek Assistance from the job Supervisor to select the controls required, to lower the risk to an acceptable level, before the task can commence
Moderate Class 2 (6 - 9)	Follow Company procedures

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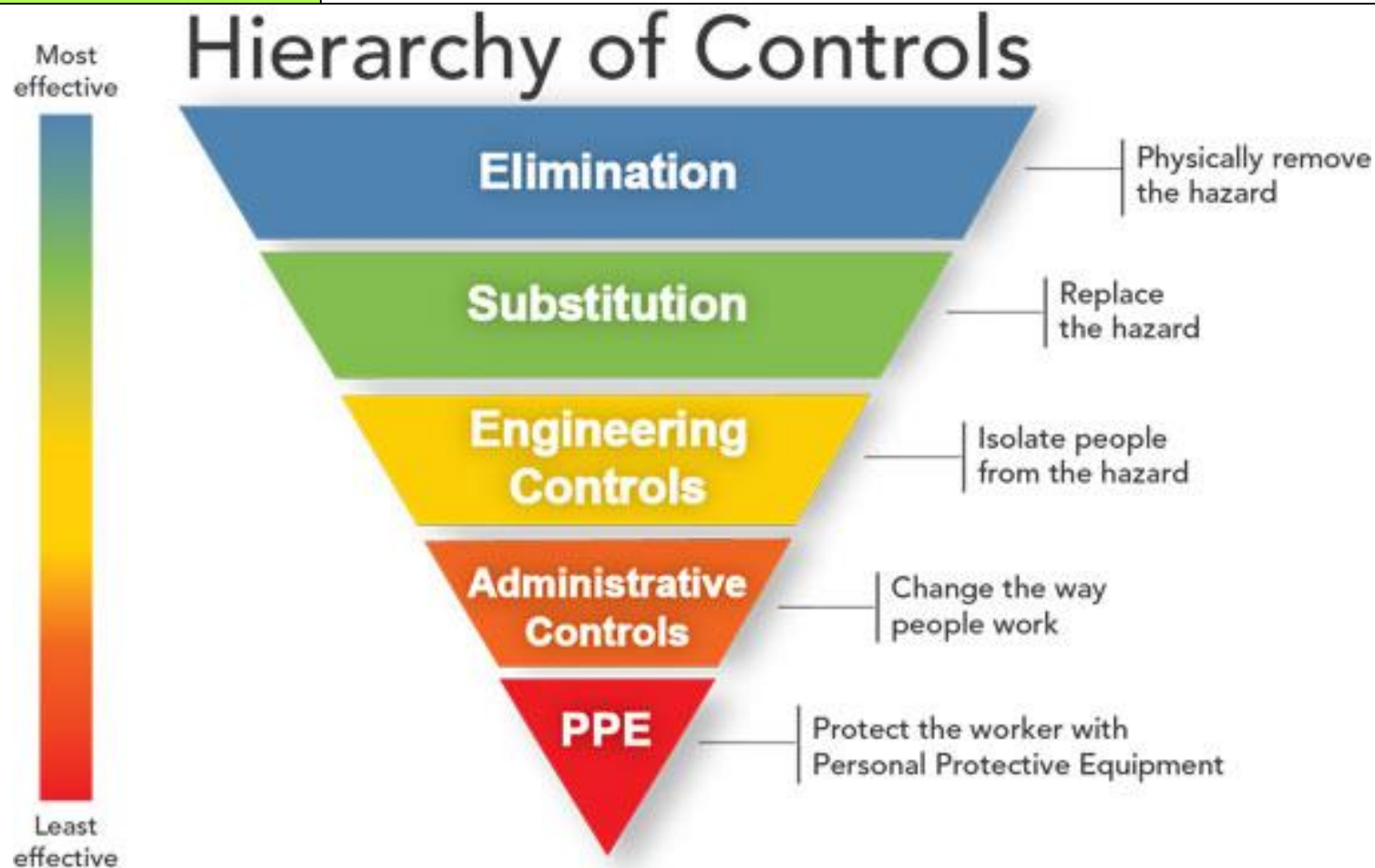
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Low Risk Class 3 (1 - 5)

Ok for now, continue to monitor and review when performing task/s



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SWMS:01

GENERAL WORK ON SITE

Sequence of basic job steps	Hazards	Risk			Recommended action or procedure	By whom	Residual Risk		
		L	C	R			L	C	R
General Work on Site	Various hazards Sun (UV) Exposure	3	3	S	- All personnel are to have been inducted into the contents of this site plan, have a construction industry general safety induction blue card and have undertaken a site-specific induction prior to commencement of work on site. - All workers are to wear broad brimmed attachments for safety helmets. Wear 15+ sunscreen on exposed skin, wear clothing with appropriate sun protection factor. - All personnel are to read, understand, sign and abide by Principal Contractors Safety and Environmental Plan	All Carsburg & Subcontracted Personnel	2	2	L
	Snakes, Ticks and other biting insects				Check for Dangerous wildlife; Remove if required.				
	Site Safety				All workers are to follow all of Site specific rules, regulations and site requirements.				

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Manual handling of tools and equipment	Vehicles are to be appropriate for site	3	3	M	- Pre-use inspections are to be undertaken daily (and recorded) of the plant - Vehicles are to be appropriate for site works, i.e. flashing lights, reversing alarm, two way radios.	All Carsburg & Subcontracted Personnel	2	2	L
	Public				Comply with Principal Contractor Public Access control measures				
	Foreign object debris FOD	4	4	S	- Ensure all items not in use are secured at all times. - Provide dust suppression as required.		3	3	M
Manual handling of tools and equipment	Lifting heavy, awkward or prolonged lifts. Falling Objects	3	3	S	- All personnel are advised to undertake sufficient warm up and stretching exercises. Carsburg personnel are encouraged not to lift objects or materials that they feel may be too heavy and to avoid lifting or carrying loads for prolonged periods. - Where possible personnel are to be encouraged to rotate work between tasks on site and take short breaks to stretch and alleviate tired muscles. - Where possible mechanical handling devices are to be used. Where this is not possible manual lifting procedures (see SWMS:02) are to be followed. - Restrict vehicle and mobile plant movement onsite to a minimum whenever possible		2	2	M
Environmental Management Control	Dust (Windy or Manmade)	3	3	S	- All unsealed roads and any other disturbed areas should be regularly watered where the activities may create dust and when the wind is strong enough to cause soil erosion - Install a dust barrier fence where practical - Eye protection shall be worn - Wear respiratory protection - When drilling masonry use P2 dust mask - Ensure the requirements of the Environmental Management Procedure is implemented when creating dust		2	2	L

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SWMS:01

GENERAL WORK ON SITE

Sequence of basic job steps	Hazards	Potential Risk			Recommended action or procedure	By whom	Residual Risk		
		L	C	R			L	C	R
Working with tools that generate or working in an environment with excessive noise	Exposure to excessive noise	3	3	S	Carsburg personnel are to wear suitable hearing protection whenever working with or near noisy plant or operations. (see SWMS:15)	All Carsburg & Subcontracted Personnel	2	2	L
Personal Protective Equipment Use	Exposure to various hazards	3	3	S	- At all times Carsburg personnel are to wear mandatory personal protective equipment as specified by the Principal Contractor. - At all times Carsburg personnel are to wear relevant Personal Protective Equipment as made available for specific work practices or working environment. - All sites requires Hi Vis Long Sleeve Shirts and Long Pants at all times, as well as Hard Hat and Safety Boots.	All Carsburg & Subcontracted Personnel	2	2	L

Implementation and Monitoring

Carsburg & Subcontracted Personnel:
 Carsburg Manager/Supervisor:

Follow procedure, report general work hazards and generally work in a safe manner at all times on site.
 Monitor SWMS controls on site using the Observation Log.

References:

QLD Work Health & Safety Act 2011, Part 2
 QLD Work Health & Safety Regulation 2011, Chapters 3, 4 & 6

Monitoring & Review of SWMS Use and Effectiveness

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Observation Log	01	02	03	04	05	06
Initial:						
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GENERAL WORK ON SITE

I acknowledge that I have been trained in the SWMS listed above, the controls are clearly understood, my qualifications are current to undertake the activity and I will comply with the SWMS

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SWMS:02

MANUAL HANDLING & MOVEMENT OF MATERIALS ON SITE

Sequence of basic job steps	Hazards	Potential Risk			Recommended action or procedure	By whom	Resultant Risk		
		L	C	R			L	C	R
Performing lifting, carrying, lowering and pushing or pulling tasks of general materials on site.	- Falling Objects - Slip/Trip/Falls - Poor Lifting postures - Excessive, bulky or unstable loads	3	4	H	- Manual Handling risk assessments are to be undertaken for all high risk manual handling tasks which occur from time to time and appropriate controls measures implemented by personnel. - Personnel are not to lift any object that they feel may be too heavy and prolonged lifting and carrying of any heavy load is to be avoided wherever possible. - On site mechanical lifting equipment is to be used where at all possible. (trucks, cranes, trolleys, vehicles). - Overreaching by personnel to pick up a load is to be avoided wherever practicable. - Personnel are to plan their movements and ensure paths of movement are clear from obstructions prior to lifting/handling loads. - Personnel are to be instructed in back care and manual handling safety through the recommendation of a number of lifting and handling practices. Know the Load: Be aware of the characteristics (i.e. weight, size, shape, grips) of the object being lifted Determine Best Technique: Check distances to be travelled, what lifting/mechanical aids are available, etc	All Carsburg & Subcontracted Personnel	2	4	S

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SWMS:02

MANUAL HANDLING & MOVEMENT OF MATERIALS ON SITE

Sequence of basic job steps	Hazards	Potential Risk			Recommended action or procedure	By whom	Resultant Risk		
		L	C	R			L	C	R

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Performing lifting, carrying, lowering and pushing or pulling tasks of general materials on site.	- Falling Objects - Slip/Trip/Falls - Poor Lifting postures - Excessive, bulky or unstable loads	3	4	H	Prepare the Area: Remove obstacles, trip hazards and clean-up spills Arrange Assistance: If additional personnel or equipment is required, ensure it is organised before attempting the handling task Communicate: Tell handling partner(s) where the load is going before you lift and nominate one person to co-ordinate the lift. Correct Technique: While facing a load position yourself as close to the load as possible in the direction of travel. Knees are to be bent, with back being aligned as straight as possible. All movements are to be smooth and turning is to be directed from the feet/legs rather than the torso. Additional Factors: Pushing is preferred to pulling, heavier items are to be stored between hip and shoulder height wherever practicable. - Workers are not to work above or below personnel where there is the risk of materials or items falling below. - Clear access is to be maintained around the site generally and especially around equipment and materials that require frequent lifting/handling. - Where personnel are unsure of a particular method of lifting/handling or a task is considered potentially hazardous, they are to report the issue to the Supervisor to discuss possible alternate controls. - At all times Carsburg personnel are to wear mandatory personal protective equipment as specified by the Principal Contractor. - At all times Carsburg personnel are to wear relevant Personal Protective Equipment as made available for specific work practices or working environment.	All Carsburg & Subcontracted Personnel	2	4	S
Personal Protective Equipment Use.	Exposure to various hazards.	3	3	S	Gloves are to be used when shifting material, which may cause a hazard.	All Carsburg & Subcontracted Personnel	2	2	L

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SWMS:02

MANUAL HANDLING & MOVEMENT OF MATERIALS ON SITE

Implementation and Monitoring

Carsburg & Subcontracted Personnel:

Follow procedure and report manual handling hazards

Carsburg Manager/Supervisor:

Assist in the planning and control of high-risk tasks, provide relevant lifting aids and monitor SWMS controls on site using the Observation Log

References:

QLD Work Health & Safety Act 2011, Part 2

QLD Work Health & Safety Regulation 2011, Part 4.2

Code of Practice: Hazardous Manual Tasks

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SWMS:03

UNDERTAKING WORK IN PUBLIC ACCESS AREAS

Sequence of basic job steps	Hazards	Potential Risk			Recommended action or procedure	By whom	Resultant Risk		
		L	C	R			L	C	R

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Undertaking work in public access areas. (High Risk Work) Working on an adjacent Road or Railway or other corridor that is used by traffic other than pedestrians.	• Projectiles • Slips/trips/falls • Vehicle and mobile plant hazards • Falling objects	3	4	H	• Work to be undertaken in areas where the public has access is to be considered highly sensitive, and as such is to be avoided wherever possible by personnel. • Warning / hazard signs and/or caution lighting are to be used to clearly identify the area as being a place of work. • Barricading or screening which prevents access is to be used to segregate work areas including storage areas from public access areas. • Public areas are to be kept clear of any debris, trip or slip hazards and the spreading of dust is to be kept to a minimum. • The area is to be cleaned progressively during the time of the activity and at the completion of the work. • If the lifting of any materials or equipment is necessary the public are to be prevented from entering the immediate area during this time. • Where work activities at height place the public, pedestrians or other workers at risk, adequate falling object/projectile protection is to be implemented in consultation with the Principal Contractor to ensure injuries are prevented. These may include: • the erection of edge protection with fully enclosed mesh boards and toe-boards,	All Carsburg & Subcontracted Personnel	2	4	S
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Personal Protective Equipment Use	Exposure to various hazards	3	3	S	- At all times Carsburg personnel are to wear mandatory personal protective equipment as specified by the Principal Contractor. - At all times Carsburg personnel are to wear relevant Personal Protective Equipment as made available for specific work practices or working environment. - Hi Vis clothing is mandatory and must be worn on all sites. Long sleeves and long pants to be worn when specified by Principal Contractor.	All Carsburg & Subcontracted Personnel	2	2	L
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SWMS:03

UNDERTAKING WORK IN PUBLIC ACCESS AREAS

Sequence of basic job steps	Hazards	Potential Risk			Recommended action or procedure	By whom	Resultant Risk		
		L	C	R			L	C	R
Undertaking work in public access areas.	- Projectiles - Slips/trips/falls - Vehicle and mobile plant hazards - Falling objects	3	4	H	- the erection of gantries, hoardings and containment sheeting to prevent falling objects and projectiles from reaching people below or adjacent to work activities. - the isolation of the area below where work is being undertaken above using barricading, fencing and other exclusion controls. - Where plant and machinery are being operated, suitable exclusion zones and isolation of these processes is to be undertaken in conjunction with the Principal Contractor. - No equipment use or activities are to be undertaken which could result in projectiles entering a public area. - Vehicles crossing public access ways are to be driven with caution at 10km/hr or less and where necessary a spotter is to be used to direct the traffic. Refer also to SWMS:12. - Where work is to be carried out on/near public roads, consultation with the Principal Contractor is to be undertaken to arrange for a qualified Traffic Controller(s) to safely direct vehicular traffic around/through the work area.	All Carsburg & Subcontracted Personnel	2	4	S

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SWMS:03

UNDERTAKING WORK IN PUBLIC ACCESS AREAS

Implementation and Monitoring

Carsburg & Subcontracted Personnel:

Follow procedure and report inconsistencies

Carsburg Manager/Supervisor:

Undertake consultation with the Principal Contractor regarding public protection and monitor SWMS controls on site using the Observation Log

References:

QLD Work Health & Safety Act 2011, Part 2

QLD Work Health & Safety Regulation 2011, Chapter 3, Div 10 & Chapter 12

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Fax: 07 3267 8352

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UNDERTAKING WORK IN PUBLIC ACCESS AREAS

I acknowledge that I have been trained in the SWMS listed above, the controls are clearly understood, my qualifications are current to undertake the activity and I will comply with the SWMS

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SWMS:04

WORKING NEAR LIVE ELECTRICAL INSTALLATIONS

Sequence of basic job steps	Hazards	Potential Risk			Recommended action or procedure	By whom	Resultant Risk		
		L	C	R			L	C	R

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(High Risk Construction Work) Working on or near an energised electrical installation or services. Working Near Overhead Powerlines	Contact with overhead Powerlines	4	5	H	- Safe approach distances are to be determined by the Plant Operator and/or Carsburg Manager/Supervisor prior to any work commencing near overhead powerlines. - No worker/operator is to operate any plant/equipment in situations where any of the following is within the exclusion zone: - any part of the plant, - a person working in the bucket of an elevating work platform (EWP), - any hand tools or other equipment held by any person involved with the operation, or - the load being moved. - If work is required to be undertaken where there is a risk of intrusion into the safe approach distances for circumstances listed above special provisions to be made include: - to notify the power authority before commencing work, - to obtain written permission from the power authority, - not to commence work until a pre-start site meeting and a risk assessment detailing the necessary controls to be implemented has been completed.	All Carsburg & Subcontracted Personnel	1	5	S
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SWMS:04

WORKING NEAR LIVE ELECTRICAL INSTALLATIONS

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Sequence of basic job steps	Hazards	Potential Risk			Recommended action or procedure	By whom	Resultant Risk		
		L	C	R			L	C	R
Working Near Underground Services	• Contact with underground services	4	5	H	- No excavation or trenching work is to be undertaken by Carsburg workers/operators until the Contracting Party has provided the worker(s)/operator(s) with the prescribed/written information/details (e.g. map), of all underground services in and near the area where work is to be carried out (refer SWMS:10). - Carsburg workers/operators are to ensure that any reasonable restrictions contained in this information are adhered to whilst undertaking excavation and trenching activities.		1	5	S
Personal Protective Equipment Use	Exposures to various hazards.	3	3	S	Hi Vis clothing, Hard Hat and Safety boots mandatory and must be worn on all sites. Hearing Protection, Eye Protection, Safety Gloves as well as Long sleeves and Long Pants to be worn when specified on site by Principal Contractor.	All Carsburg & Subcontracted Personnel	2	2	L

Implementation and Monitoring

Carsburg & Subcontracted Personnel:

Follow procedure and report inconsistencies

Carsburg Manager/Supervisor:

Undertake relevant consultation and planning with electrical authorities and monitor SWMS controls on site using the Observation Log.

References:

QLD Work Health & Safety Act 2011, Part 2

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QLD Electrical Safety Act 2002, Section 30

QLD Code of Practice: Working Near Exposed Live Parts

Australian/New Zealand Standard AS/NZS 3012 Electrical Installations – Construction and Demolition Sites

Australian/New Zealand Standard AS/NZS 3105 Electrical portable outlet devices.

Monitoring & Review of SWMS Use and Effectiveness

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WORKING NEAR LIVE ELECTRICAL INSTALLATIONS

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SWMS:05

GENERAL MOBILE PLANT USE

Sequence of basic job steps	Hazards	Potential Risk			Recommended action or procedure	By whom	Resultant Risk		
		L	C	R			L	C	R
(High Risk Construction Work) Working with or near powered mobile plant. Preparing to operate mobile plant on site	Failure to identify faulty / damaged plant & equipment	3	4	H	- Pre-use inspections are to be undertaken (and recorded) of the plant in accordance with manufacturer requirements. Refer to Appendix E. - Log books containing up-to-date details of plant inspections, servicing and maintenance to be maintained with the plant. - Plant identified as being damaged or faulty is to be immediately removed from service and affixed with a “Danger Do Not Operate” tag.	Plant Operator	2	4	S
	Non-competent operators	3	4	H	- Only persons who are competent, having received suitable familiarisation training and who hold the relevant certificate(s) of competency / VOC evidence, are to operate plant on site. - Mobile plant is to be operated in strict accordance with manufacturer requirements.	Carsburg Manager / Supervisor Plant Operator	2	4	S
Operating mobile plant on site	Inappropriate access	3	3	S	Operators must only access mobile plant via the manufacturer provided access point(s). Do not access / position yourself on sections of the plant that are not intended for access purposes. Do not jump from plant.	Plant Operator	2	3	M

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	Roll-over	3	5	H	- The suitability of the road surface is to be determined by the operator prior to access. - Mobile plant is to be fitted with roll-over and falling object protection and shatter-proof material in the windscreen and in viewing panels. - Mobile plant is not to be operated on unstable ground or on inclines that exceed manufacturer recommendations or otherwise may pose a risk of the mobile plant rolling over. - Operators are to wear seat belts / restraints at all times when operating mobile plant. - Ensure the SWL is not exceeded. - Do not operate mobile plant near edges, drop-offs or floor penetrations without concrete jersey barrier edge protection.	Carsburg Manager Plant Operator	1	5	S
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SWMS:05

GENERAL MOBILE PLANT USE

Sequence of basic job steps	Hazards	Potential Risk			Recommended action or procedure	By whom	Resultant Risk		
		L	C	R			L	C	R
	Contact with overhead powerlines	4	5	H	No part of the mobile plant or person / equipment etc, is to enter a power line exclusion zone. <i>Note: This is 3m minimum for low voltage, if unsure check with principal contractor.</i>	Carsburg Manager / Supervisor Plant Operator	1	5	S
	Contact with underground services	4	5	H	No excavation / digging work is to commence prior to the operator receiving (in writing) the prescribed information regarding the location of all underground services on site. Refer to SWMS: 10 Excavation & Trenching.	Carsburg Manager / Supervisor Plant Operator	1	5	S
	Striking other plant / structures / workers	3	5	H	- If working in areas exposed to site traffic or public roads, concrete jersey barriers are to be erected. - Ensure travel alarms and flashing warning lights are working.	Carsburg Manager / Supervisor	1	5	S

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					- No person is to enter into the operating zone of mobile plant without first establishing contact with the operator. - Operators and workers are to wear high visibility vests. - Where there is a potential for mobile plant to contact scaffolding, formwork, tilt-up panel bracing or similar load bearing structures, appropriate barricading must be installed / erected to prevent mobile plant access to the immediate area, or protect the structure from such collisions.	Plant Operator All Carsburg & Subcontracted Personnel			
	Contact with exposed moving parts	3	4	H	All machinery is to be fitted with suitable guarding around parts that move or transmit power.	Carsburg Manager	1	4	S
Leaving mobile plant unattended on site	- Unauthorised access / use - Failure to adequately secure plant	4	5	H	- Ensure plant is parked on level ground and is left in a suitably stowed configuration whenever it is unattended. - Remove keys from plant and secure to prevent unauthorised access / use. - Loads are not to be left suspended and earthmoving plant is to be fully lowered.	Plant Operator	1	5	S
Site Speed Limits and hazard awareness.	Collision hazards	3	3	S	Speed Limit of 5 klm per hour on site must be adhered to at all times. Flashing beacon and or orange hazard lights must be in use at all times on site.	All Carsburg & Subcontracted Personnel	2	2	L
Personal Protective Equipment Use	Exposure to various hazards	3	3	S	Hi Vis clothing, Hard Hat and Safety boots mandatory and must be worn on all sites. Hearing Protection, Eye Protection, Safety Gloves as well as Long sleeves and Long Pants to be worn when specified on site by Principal Contractor.	All Carsburg & Subcontracted Personnel	2	2	L

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Faulty Equipment	Failure of Equipment	3	3	M	All Carsburg Operators are to complete daily pre-starts and have this initialised by site supervisor prior to starting any excavation work.	All Carsburg & Subcontracted Personnel	3	3	M
Delivery of Materials		3	3	M	Carsburg vehicles may be required to engage a spotter to reverse on site. Check with Site specific requirements and adhere to Principle Contractors site terms and conditions. Drivers MUST wait until a spotter is engaged if site requires this action.	All Carsburg & Subcontracted Personnel	3	3	M
Reversing on Site		3	3	M	Carsburg vehicles may be required to engage a spotter to reverse on site. Check with Site specific requirements and adhere to Principle Contractors site terms and conditions. Drivers MUST wait until a spotter is engaged if site requires this action	All Carsburg & Subcontracted Personnel	3	3	M
Contact with Mobile Plant/trucks	Vehicle & Mobile plant hazards	3	3	M	All mobile plant and machinery are to adhere to the exclusion zones for all trucks delivering materials to site under the direction of a spotter.	All Carsburg & Subcontracted Personnel	3	3	M



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[illegible]

GENERAL MOBILE PLANT USE

Carsburg Personnel -

Follow procedure and report inconsistencies.

Carsburg Manager/Supervisor -

Ensure only licenced / competent persons operate plant and monitor SWMS requirements on site using the Observation Log

QLD Work Health & Safety Regulation 2011, Chapter 5

Code of Practice: Managing the Risks of Plant in the Workplace

Appendix D – Plant & Equipment Register

Appendix E – Plant & Equipment Checklist

Monitoring & Review of SWMS Use and Effectiveness						
Observation Log	01	02	03	04	05	06
Initial:						
Date:						

GENERAL MOBILE PLANT USE

Communication to Personnel:

I acknowledge that I have been trained in the SWMS listed above, the controls are clearly understood, my qualifications are current to undertake the activity and I will comply with the SWMS

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SWMS:06

OPERATION OF TRUCKS

Sequence of basic job steps	Hazards	Potential Risk			Recommended action or procedure	By whom	Resultant Risk		
		L	C	R			L	C	R
Preparing to operate trucks	Failure to identify faulty / damaged vehicles	3	4	H	- Pre-use inspections are to be undertaken (and recorded) of the truck in accordance with manufacturer requirements. - Log books containing up-to-date details of truck inspections, servicing and maintenance to be maintained with the truck. - Any truck identified as being damaged or faulty is to be immediately removed from service and affixed with a “Danger Do Not Operate” tag.	Truck Driver	2	4	S
	Non-competent drivers	3	4	H	- Only persons who are licenced and competent are to operate trucks on site. - All traffic regulations are to be obeyed.	Carsburg Manager / Supervisor Truck Driver	2	4	S
Driving trucks	Striking other plant / structures / workers	3	5	H	- If working in areas exposed to site traffic or public roads, concrete jersey barriers are to be erected. - Ensure travel alarms and flashing warning lights are working. - No person is to enter into the operating zone of a truck without first establishing contact with the driver. - Drivers and workers are to wear high visibility vests. - Where there is a potential for trucks to contact scaffolding, formwork, tilt-up panel bracing or similar load bearing structures, appropriate barricading must be installed / erected to prevent truck access to the immediate area, or protect the structure from such collisions. - Drivers are only to get on or off a truck that is stationary.	Carsburg Manager / Supervisor Truck Driver	1	5	S

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					Never reverse into or out of a line-up. Leave adequate room to pull out or drive through.				
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SWMS:06

OPERATION OF TRUCKS

Sequence of basic job steps	Hazards	Potential Risk			Recommended action or procedure	By whom	Resultant Risk		
		L	C	R			L	C	R
Driving trucks	Striking other plant / structures / workers	3	5	H	- Under normal circumstances, drivers are not to leave the cab during loading. If drivers must leave the cab during loading for any reason, they are to do so using extreme caution. - Prior to operating, trucks are to be moved off slowly in order to check that the brakes and steering are functioning correctly. - Make certain that the area in the direction of travel is clear of people and obstructions. Use a spotter if necessary. - Only travel at a speed safe for the circumstances on site (and in accordance with site speed limit(s), i.e. maintain a speed which is safe for the condition of the roadway, grade, clearance, visibility and traffic etc. - Always yield right of way to a loaded machine. If in doubt, yield right of way in any case. - Other vehicles/mobile plant is to be followed at a safe distance.	Truck Driver	1	5	S

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	Contact with overhead powerlines	4	5	H	No part of the truck or person / equipment etc, is to enter a power line exclusion zone. Note: This is 3m minimum for low voltage, if unsure check with principal contractor. Refer – SWMS:04.	Carsburg Manager / Supervisor Truck Driver	1	5	S
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SWMS:06

OPERATION OF TRUCKS

Sequence of basic job steps	Hazards	Potential Risk			Recommended action or procedure	By whom	Resultant Risk		
		L	C	R			L	C	R
Driving trucks	- Excessive loading - Roll-over	3	5	H	- Ensure that the road surface is suitable for entry/exit. - Drivers are to ensure the truck is not overloaded. - Material is to be loaded in such a way that it does not project beyond the truck body and present a hazard to other plant, people or structures. - Where material is to be transported on a public road, <i>Traffic Regulations</i> require that material projecting either 1.2 metres or more beyond the front or rear of the vehicle, or 150mm on either side, is to have a visible red flag or object fastened to the projecting end. <i>Note: unusually wide or long loads require a permit from the Police Department.</i> - Trucks are not to be operated on unstable ground. Where practicable, avoid turning/working/travelling across a slope, as a sharp turn up or down a hill may cause a roll-over. - Drivers are to wear seat belts at all times when driving trucks.	Truck Driver	1	5	S

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					Do not drive trucks near edges, drop-offs or floor penetrations without concrete jersey barrier edge protection.				
Site Speed Limits and hazard awareness.	Collision hazards	3	3	S	Speed Limit of 5 klm per hour on site must be adhered to at all times. Flashing beacon and or orange hazard lights must be in use at all times on site.	All Carsburg & Subcontracted Personnel	2	2	L
Personal Protective Equipment Use	Exposure to various hazards	3	3	S	Hi Vis clothing, Hard Hat and Safety boots mandatory and must be worn on all sites. Hearing Protection, Eye Protection, Safety Gloves as well as Long sleeves and Long Pants to be worn when specified on site by Principal Contractor.	All Carsburg & Subcontracted Personnel	2	2	L
Vehicle Access and Egress.	Falling from vehicle				Use designated access points only to access and egress from trucks and trailers / floats. Always use three points of contact. Do not jump.				
Burst Hydraulic Hose	Hazardous Chemical Spills				- Contain all spills with spill response kit to contain any spills. If spill is too large to contain contact site supervisor immediately to arrange larger control. - Ensure a suitable fire extinguisher is available where flammable chemicals are used onsite - When handling flammable chemicals ensure PPE is used as per the SDS - Follow SDS Register <i>Refer to Refuelling SWMS</i>				
Faulty Equipment	Failure of Equipment	3	3	M	All Carsburg Operators are to complete daily pre-starts and have this initialled by site supervisor prior to starting any excavation work.	All Carsburg & Subcontracted Personnel	3	3	M

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Delivery of Materials		3	3	M	Carsburg vehicles may be required to engage a spotter to reverse on site. Check with Site specific requirements and adhere to Principle Contractors site terms and conditions. Drivers <u>MUST</u> wait until a spotter is engaged if site requires this action.	All Carsburg & Subcontracted Personnel	3	3	M
Reversing on Site		3	3	M	Carsburg vehicles may be required to engage a spotter to reverse on site. Check with Site specific requirements and adhere to Principle Contractors site terms and conditions. Drivers <u>MUST</u> wait until a spotter is engaged if site requires this action.	All Carsburg & Subcontracted Personnel	3	3	M
Contact with Mobile Plant/trucks	Vehicle & Mobile plant hazards	3	3	M	All mobile plant and machinery are to adhere to the exclusion zones for all trucks delivering materials to site under the direction of a spotter	All Carsburg & Subcontracted Personnel	3	3	M

Implementation and Monitoring

Carsburg Personnel -

Carsburg Manager/Supervisor -

Follow procedure and report inconsistencies.

Ensure only licenced / competent persons operate plant and monitor SWMS requirements on site using the Observation Log

References:

QLD Work Health & Safety Act 2011, Part 2

QLD Traffic Act & Regulations

Appendix D – Plant & Equipment Register

SWMS:06

OPERATION OF TRUCKS

Monitoring & Review of SWMS Use and Effectiveness

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Observation Log	01	02	03	04	05	06
Initial:						
Date:						

SWMS:06

OPERATION OF TRUCKS

Communication to Personnel:

I acknowledge that I have been trained in the SWMS listed above, the controls are clearly understood, my qualifications are current to undertake the activity and I will comply with the SWMS

Name	Signature	Date

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SWMS:07

OPERATION OF EXCAVATORS & BACKHOES

Sequence of basic job steps	Hazards	Potential Risk			Recommended action or procedure	By whom	Resultant Risk		
		L	C	R			L	C	R

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Preparing to operate excavators / backhoes	Failure to identify faulty / damaged plant	3	4	H	- Pre-use inspections are to be undertaken (and recorded) of the plant in accordance with manufacturer requirements. - Log books containing up-to-date details of plant inspections, servicing and maintenance to be maintained with the plant. - Any plant identified as being damaged or faulty is to be immediately removed from service and affixed with a “Danger Do Not Operate” tag.	Plant Operator	2	4	S
	Non-competent operators	3	4	H	Only persons who are competent, having received suitable familiarisation training and who hold the relevant certificate(s) of competency / VOC evidence, are to operate excavators and backhoes on site.	Carsburg Manager / Supervisor Plant Operator	2	4	S
Operating excavators / backhoes on site	Inappropriate access	3	3	S	Operators are to only access mobile plant via the manufacturer provided access point(s), and are not to access / position themselves on sections of the plant that are not intended for access purposes.	Plant Operator	2	3	M
	Roll-over	3	5	H	- Excavators and backhoes are not to be operated on unstable ground or on inclines that exceed manufacturer recommendations or otherwise may pose a risk of the mobile plant rolling over. - Operators are to wear seat belts / restraints at all times when operating excavators and backhoes. - Ensure the SWL is not exceeded. - Do not operate excavators or backhoes near edges, drop-offs or floor penetrations without concrete jersey barrier edge protection. - Digging buckets are to be kept as close to the ground as possible during operation.	Plant Operator	1	5	S

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Sequence of basic job steps	Hazards	Potential Risk			Recommended action or procedure	By whom	Resultant Risk		
		L	C	R			L	C	R
Operating excavators / backhoes on site	Contact with overhead powerlines	4	5	H	No part of the mobile plant or person / equipment etc, is to enter a power line exclusion zone. <i>Note: This is 3m minimum for low voltage, if unsure check with principal contractor.</i>	Carsburg Manager / Supervisor Plant Operator	1	5	S
	Contact with underground services	4	5	H	No excavation / digging work is to commence prior to the operator receiving (in writing) the prescribed information regarding the location of all underground services on site. Refer to SWMS: 10 Excavation & Trenching.	Carsburg Manager / Supervisor Plant Operator	1	5	S
	Striking other plant / structures / workers	3	5	H	- If working in areas exposed to site traffic or public roads, concrete jersey barriers are to be erected. - Ensure travel alarms and flashing warning lights are working. - No person is to enter into the operating zone of mobile plant without first establishing contact with the operator. - Operators and workers are to wear high visibility vests. - An exclusion zone is to be established for pedestrian traffic around excavator/backhoe activities to keep unauthorised persons clear of the work area at all times. This includes the area behind an operating excavator where 'swing-back' occurs. - Whilst the front shovel of a backhoe is in use, the backhoe attachment is to be in its travel position with safety locking device in place. - Where there is a potential for excavators or backhoes to contact scaffolding, formwork, tilt-up panel bracing or similar load bearing structures, appropriate barricading must be installed / erected to prevent mobile plant access to the immediate area, or protect the structure from such collisions.	Carsburg Manager / Supervisor Plant Operator All Carsburg & Subcontracted Personnel	1	5	S

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Faulty Equipment	Failure of Equipment	3	3	M	All Carsburg Operators are to complete daily pre-starts and have this initialled by site supervisor prior to starting any excavation work.	All Carsburg & Subcontracted Personnel	3	3	M
Reversing on Site		3	3	M	Carsburg vehicles may be required to engage a spotter to reverse on site. Check with Site specific requirements and adhere to Principle Contractors site terms and conditions. Drivers <u>MUST</u> wait until a spotter is engaged if site requires this action	All Carsburg & Subcontracted Personnel	3	3	M
Contact with Mobile Plant/trucks	Vehicle & Mobile plant hazards	3	3	M	All mobile plant and machinery are to adhere to the exclusion zones for all trucks delivering materials to site under the direction of a spotter.	All Carsburg & Subcontracted Personnel	3	3	M

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SWMS:07

OPERATION OF EXCAVATORS & BACKHOES

Sequence of basic job steps	Hazards	Potential Risk			Recommended action or procedure	By whom	Resultant Risk		
		L	C	R			L	C	R
	Falling objects	3	4	H	- Quick-hitch devices are only to be used if a safety pin is inserted. - Excavators are not to create dangerous overhangs while on a high workface or undercut while working below the level of the machine. The wheels or tracks are to be positioned 90 degrees to the work face to enable a quick withdrawal and excavator buckets are to never be extended to far in the downhill direction. - Excavators and backhoes are to be fitted with roll-over and falling object protection and shatter-proof material in the windscreen and in viewing panels - Safety levers are to be locked at all times whenever the machine is not in use.	Plant Operator	2	4	S
	Contact with exposed moving parts	3	4	H	All machinery is to be fitted with suitable guarding around parts that move or transmit power.	Carsburg Manager	1	4	S
Unfamiliar types of Excavator / Backhoe operations.	Striking other plant / Structures / Workers Roll over	3	5	H	- Operator is to read operators manual before engaging in any work on unfamiliar Excavators / Backhoes. - Exclusion zone is to be identified by measuring counter weight and machine reach. - Operator to identify SWL limits as labelled on boom and displayed on machine. - If machine is fitted with “Retractable Track System” operator must read operation procedures in operator manual prior to use of machine	Plant Operator	1	5	S

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Operating excavators in craning mode	- Non-competent personnel - Falling objects - Failure of plant & equipment	4	5	H	- Only those excavators which are designed and manufactured to operate in craning operations are to be used to lift and place materials (i.e. pipes, culverts etc.), and the equipment is to be operated in strict accordance with manufacturer recommendations (refer also to SWMS:05). - If the excavator is to be used in crane mode, the operator is to hold an “LE” type excavator certificate obtained during or after 1996. Where an operator holds an older type of earthmoving certificate, they are to also hold a slewing mobile crane certificate. - Personnel required to sling loads are to hold a Dogger’s licence. - The SWL of the excavator is not to be exceeded when lifting materials and the excavator is to have a load chart within the cabin. - Operators are to ensure the hitching point and the associated lifting gear, are approved types when used in crane mode.	Plant Operator Carsburg Manager Licenced Dogger	1	5	S
Burst Hydraulic Hose	Hazardous Chemical Spills				- Contain all spills with spill response kit to contain any spills. If spill is too large to contain contact site supervisor immediately to arrange larger control. - Ensure a suitable fire extinguisher is available where flammable chemicals are used onsite - When handling flammable chemicals ensure PPE is used as per the SDS - Follow SDS Register <i>Refer to Refuelling SWMS</i>				

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SWMS:07									
OPERATION OF EXCAVATORS & BACKHOES									
Sequence of basic job steps	Hazards	Potential Risk			Recommended action or procedure	By whom	Resultant Risk		
		L	C	R			L	C	R

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	- Non-competent personnel - Falling objects - Failure of plant & equipment	4	5	H	- Quick-hitch devices and lifting points are to comply with the following minimum requirements: - lifting attachments are to have been supplied by the manufacturer, or otherwise must be designed by an engineer; - an independent latching device is required for quick-hitches which is positively and mechanically (i.e. safety pin), locked in an engaged position which cannot be unintentionally disengaged; - lifting points are to form a closed eye to which a load rated shackle may be attached; - hooks are not to be used on the dipper arm or other attachments of earthmoving plant; - lifting lugs are not to be attached to buckets; - markings which include details of manufacturers name and model, maximum rated capacity, quick hitch mass and lifting point capacity; and - if earthmoving plant is used to lift or suspend loads they must travel with the boom retracted to minimum practical radius. - Burst protection is to be fitted to the boom and dipper arm (where attached) hydraulics of all mobile plant used as a crane, regardless of the rated capacity of the plant. Burst protection may consist of controlled lowering devices or pilot-operated check valves that sense a differential in hydraulic pressure and lock the boom in position. - Loads are not to be lifted over the heads of persons, truck cabs or any vehicle. - All hitching points, lifting gear and associated equipment, is to be regularly inspected and maintained in accordance with manufacturer recommendations. Additionally, a static test at 200% of the rated capacity of each lift point is also to be carried out.	Plant Operator Carsburg Manager	1	5	S
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SWMS:07

OPERATION OF EXCAVATORS & BACKHOES

MS:07 ERATION OF EXCAVATORS & BACKHOES

Sequence of basic job steps	Hazards	Potential Risk			Recommended action or procedure	By whom	Resultant Risk		
		L	C	R			L	C	R
Operating excavator fitted with a rock breaker	- Projectiles - Excessive noise	4	5	H	- Checks are to be undertaken to ensure that the rock breaker attachment is in good order, correctly fitted and ready for use prior to work commencing. - Operators are to be competent in the operation of the rock breaker. - An exclusion zone is to be established for pedestrian traffic around rock breaker activities to keep unauthorised personnel clear of the work area at all times. This includes the area behind an operating rock breaker where 'back-swing' occurs. - Appropriate hearing protection is to be worn by the operator and any other personnel in the vicinity of rock breakers whilst they are in operation.	Plant Operator	1	5	S
Site Speed Limits and hazard awareness.	Collision hazards	3	3	S	Speed Limit of 5 klm per hour on site must be adhered to at all times. Flashing beacon and or orange hazard lights must be in use at all times on site.	All Carsburg & Subcontracted Personnel	2	2	L

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Personal Protective Equipment Use	Exposure to various hazards	3	3	S	Hi Vis clothing, Hard Hat and Safety boots mandatory and must be worn on all sites. Hearing Protection, Eye Protection, Safety Gloves as well as Long sleeves and Long Pants to be worn when specified on site by Principal Contractor.	All Carsburg & Subcontracted Personnel	2	2	L
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Implementation and Monitoring

Carsburg Personnel -

Follow procedure and report inconsistencies.

Carsburg Manager/Supervisor -

Ensure only licenced / competent persons operate plant and associated equipment / attachments and monitor SWMS requirements on site using the Observation Log

References:

QLD Work Health & Safety Regulation 2011, Chapter 5

Code of Practice: Managing the Risks of Plant in the Workplace

QLD Mobile Crane Code of Practice

AS1418.1: Cranes, hoists and winches -- General requirements

AS 1418.8: Cranes, hoists and winches - Special purpose appliances

SWMS:05 – General Mobile Plant Use

Appendix D – Plant & Equipment Register

Appendix E – Plant & Equipment Checklist

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OPERATION OF EXCAVATORS & BACKHOES

Observation Log	01	02	03	04	05	06
Initial:						
Date:						

OPERATION OF EXCAVATORS & BACKHOES

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Job Address: 60A Gardens Point Rd, Brisbane City

SWMS:08

OPERATION OF FRONT-END LOADERS, BOBCATS & DROTTS

Sequence of basic job steps	Hazards	Potential Risk			Recommended action or procedure	By whom	Resultant Risk		
		L	C	R			L	C	R
Preparing to operate front-end loaders / bobcats / drotts	Failure to identify faulty / damaged plant	3	4	H	- Pre-use inspections are to be undertaken (and recorded) of the plant in accordance with manufacturer requirements. - Log books containing up-to-date details of plant inspections, servicing and maintenance to be maintained with the plant. - Any plant identified as being damaged or faulty is to be immediately removed from service and affixed with a "Danger Do Not Operate" tag.	Plant Operator	2	4	S
	Non-competent operators	3	4	H	Only persons who are competent, having received suitable familiarisation training and who hold the relevant certificate(s) of competency / VOC evidence, are to operate front-end loaders, bobcats and drotts on site.	Carsburg Manager / Supervisor Plant Operator	2	4	S
Operating front-end loaders / bobcats / drotts on site	Inappropriate access	3	3	S	Operators are to only access mobile plant via the manufacturer provided access point(s), and are not to access / position themselves on sections of the plant that are not intended for access purposes.	Plant Operator	2	3	M

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	Roll-over	3	5	H	• Front-end loaders, bobcats and drotts not to be operated on unstable ground or on inclines that exceed manufacturer recommendations or otherwise may pose a risk of the mobile plant rolling over. • Operators are to wear seat belts / restraints at all times when operating mobile plant. • Ensure the SWL is not exceeded. • Do not operate loaders, bobcats and drotts near edges, drop-offs or floor penetrations without concrete jersey barrier edge protection. • Digging buckets are to be kept as close to the ground as possible during operation.	Plant Operator	1	5	S
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SWMS:08

OPERATION OF FRONT-END LOADERS, BOBCATS & DROTTS

Sequence of basic job steps	Hazards	Potential Risk			Recommended action or procedure	By whom	Resultant Risk		
		L	C	R			L	C	R
Operating front-end loaders / bobcats / drotts on site	Contact with overhead powerlines	4	5	H	No part of the mobile plant or person / equipment etc, is to enter a power line exclusion zone. <i>Note: This is 3m minimum for low voltage, if unsure check with principal contractor.</i>	Carsburg Manager / Supervisor Plant Operator	1	5	S
	Contact with underground services	4	5	H	No excavation / digging work is to commence prior to the operator receiving (in writing) the prescribed information regarding the location of all underground services on site. Refer to SWMS: 10 Excavation & Trenching.	Carsburg Manager / Supervisor Plant Operator	1	5	S

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Burst Hydraulic Hose	Striking other plant / structures / workers	3	5	H	- If working in areas exposed to site traffic or public roads, concrete jersey barriers are to be erected. - Ensure travel alarms and flashing warning lights are working. - No person is to enter into the operating zone of mobile plant without first establishing contact with the operator. - Operators and workers are to wear high visibility vests. - An exclusion zone is to be established for pedestrian traffic to keep unauthorised persons clear of the work area at all times. - Operators are to keep hands and feet on the controls and within the cab at all times whilst operating bobcats. - Where there is a potential for mobile plant to contact scaffolding, formwork, tilt-up panel bracing or similar load bearing structures, appropriate barricading must be installed / erected to prevent mobile plant access to the immediate area, or protect the structure from such collisions.	Carsburg Manager / Supervisor Plant Operator All Carsburg & Subcontracted Personnel	1	5	S
	Hazardous Chemical Spills	3	5	H	- Contain all spills with spill response kit to contain any spills. If spill is too large to contain contact site supervisor immediately to arrange larger control. - Ensure a suitable fire extinguisher is available where flammable chemicals are used onsite - When handling flammable chemicals ensure PPE is used as per the SDS - Follow SDS Register <i>Refer to Refuelling SWMS</i>		1	5	S

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OPERATION OF FRONT-END LOADERS, BOBCATS & DROTTS

Sequence of basic job steps	Hazards	Potential Risk			Recommended action or procedure	By whom	Resultant Risk		
		L	C	R			L	C	R
Operating front-end loaders / bobcats / drotts on site	Falling objects	3	5	H	- Quick-hitch devices are only to be used if a safety pin is inserted. - Plant is to be fitted with roll-over and falling object protection and shatter-proof material in the windscreen and in viewing panels. - Loads are to be carried as close to the ground as possible. - Operators are to ensure that any equipment carried in the front bucket is properly secured from being accidentally dislodged. - Operators are to never raise the bucket over other persons. - Safety levers are to be locked at all times whenever the machine is not in use.	Plant Operator	1	5	S
	Contact with exposed moving parts	3	4	H	All machinery is to be fitted with suitable guarding around parts that move or transmit power.	Carsburg Manager	1	4	S
Site Speed Limits and hazard awareness.	Collision hazards	3	3	S	Speed Limit of 5 km per hour on site must be adhered to at all times. Flashing beacon and or orange hazard lights must be in use at all times on site.	All Carsburg & Subcontracted Personnel	2	2	L
Personal Protective Equipment Use	Exposure to various hazards	3	3	S	Hi Vis clothing, Hard Hat and Safety boots mandatory and must be worn on all sites. Hearing Protection, Eye Protection, Safety Gloves as well as Long sleeves and Long Pants to be worn when specified on site by Principal Contractor.	All Carsburg & Subcontracted Personnel	2	2	L

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Faulty Equipment	Failure of Equipment	3	3	M	All Carsburg Operators are to complete daily pre-starts and have this initialled by site supervisor prior to starting any excavation work.	All Carsburg & Subcontracted Personnel	3	3	M
Reversing on Site		3	3	M	Carsburg vehicles may be required to engage a spotter to reverse on site. Check with Site specific requirements and adhere to Principle Contractors site terms and conditions. Drivers MUST wait until a spotter is engaged if site requires this action	All Carsburg & Subcontracted Personnel	3	3	M
Contact with Mobile Plant/trucks	Vehicle & Mobile plant hazards	3	3	M	All mobile plant and machinery are to adhere to the exclusion zones for all trucks delivering materials to site under the direction of a spotter	All Carsburg & Subcontracted Personnel	3	3	M

Implementation and Monitoring

Carsburg Personnel -

Carsburg Manager/Supervisor -

Follow procedure and report inconsistencies.

Ensure only licenced / competent persons operate plant and monitor SWMS requirements on site using the Observation Log

References:

QLD Work Health & Safety Regulation 2011, Chapter 5

Code of Practice: Managing the Risks of Plant in the Workplace

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SWMS:05 – General Mobile Plant Use

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Monitoring & Review of SWMS Use and Effectiveness

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Job Address: 60A Gardens Point Rd, Brisbane City

Observation Log	01	02	03	04	05	06
Initial:						
Date:						

OPERATION OF FRONT-END LOADERS, BOBCATS & DROTTS

I acknowledge that I have been trained in the SWMS listed above, the controls are clearly understood, my qualifications are current to undertake the activity and I will comply with the SWMS

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SWMS:09

OPERATION OF CRAWLER TRACTORS (DOZERS)

Sequence of basic job steps	Hazards	Potential Risk			Recommended action or procedure	By whom	Resultant Risk		
		L	C	R			L	C	R
Preparing to operate dozers	Failure to identify faulty / damaged plant	4	5	H	- Pre-use inspections are to be undertaken (and recorded) of the dozer in accordance with manufacturer requirements. - Log books containing up-to-date details of plant inspections, servicing and maintenance to be maintained with the dozer. - Any dozer identified as being damaged or faulty is to be immediately removed from service and affixed with a “Danger Do Not Operate” tag.	Plant Operator	1	5	S
	Non-competent operators	4	5	H	Only persons who are competent, having received suitable familiarisation training and who hold the relevant certificate(s) of competency / VOC evidence, are to operate dozers on site.	Carsburg Manager / Supervisor Plant Operator	1	5	S

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Operating dozers on site	Inappropriate access	3	5	H	Operators are to only access dozers via the manufacturer provided access point(s), and are not to access / position themselves on sections of the plant that are not intended for access purposes.	Plant Operator	1	5	S
	Roll-over	4	5	H	- Dozers are not to be operated on unstable ground or on inclines that exceed manufacturer recommendations or otherwise may pose a risk of the dozer rolling over. - Operators are to wear seat belts / restraints at all times when operating dozers. - Ensure the SWL is not exceeded. - Do not operate dozers near edges, drop-offs or floor penetrations without concrete jersey barrier edge protection. - Wherever possible, operators are to avoid travelling horizontally across slopes by driving straight up and down (i.e. vertically). If the machine starts to slide sideways when working across a slope, the machine is to be turned downhill and the blade is to be dropped/lowered.	Plant Operator	1	5	S

SWMS:09

OPERATION OF CRAWLER TRACTORS (DOZERS)

Sequence of basic job steps	Hazards	Potential Risk			Recommended action or procedure	By whom	Resultant Risk		
		L	C	R			L	C	R
					- Dozer blades are to be kept close to the ground for balance when the machine is travelling up a steep grade. - Obstacles such as rocks or logs are to be avoided. Where this is not possible, extreme caution is to be taken and the lowest gear is to be selected. Ease up to the balance point and ease down to minimise the jolt on contact with the other side.	Plant Operator			
	Contact with underground services	4	5	H	No excavation / digging work is to commence prior to the operator receiving (in writing) the prescribed information regarding the location of all underground services on site. Refer to SWMS: 10 Excavation & Trenching.	Plant Operator	1	5	S

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	Striking other plant / structures / workers	3	5	H	- If working in areas exposed to site traffic or public roads, concrete jersey barriers are to be erected. - Ensure travel alarms and flashing warning lights are working. - No person is to enter into the operating zone of a dozer without first establishing contact with the operator. - Operators and workers are to wear high visibility vests. - An exclusion zone is to be established for pedestrian traffic to keep unauthorised persons clear of the work area at all times. - Operators are to keep an adequate amount of spoil in front of the blade when travelling down a steep slope. <i>Note: Dozer blades are not to be used as a brake for going down a steep slope except in extreme emergencies.</i> - Dozer operators are to make sure that all persons are standing well clear before pushing over trees, dozing rocks, rolling logs, or performing wire & chain pulling demolition methods. - Where there is a potential for a dozer to contact scaffolding, formwork, tilt-up panel bracing or similar load bearing structures, appropriate barricading must be installed / erected to prevent mobile plant access to the immediate area, or protect the structure from such collisions.	Carsburg Manager / Supervisor Plant Operator All Carsburg & Subcontracted Personnel	1	5	S
Site Speed Limits and hazard awareness.	Collision hazards	3	3	S	Speed Limit of 5 km per hour on site must be adhered to at all times. Flashing beacon and or orange hazard lights must be in use at all times on site.	All Carsburg & Subcontracted Personnel	2	2	L

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Personal Protective Equipment Use	Exposure to various hazards	3	3	S	Hi Vis clothing, Hard Hat and Safety boots mandatory and must be worn on all sites. Hearing Protection, Eye Protection, Safety Gloves as well as Long sleeves and Long Pants to be worn when specified on site by Principal Contractor.	All Carsburg & Subcontracted Personnel	2	2	L
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OPERATION OF CRAWLER TRACTORS (DOZERS)

Sequence of basic job steps	Hazards	Potential Risk			Recommended action or procedure	By whom	Resultant Risk		
		L	C	R			L	C	R
	Falling objects	3	4	H	- Care is to be taken when working near the edge of banks, ditches, cuts or fills, or near overhanging material. The vibration and weight of the machine may cause the edge to give way or overhanging material to fall. - Dozers are to be fitted with roll-over and falling object protection and shatter-proof material in the windscreen and in viewing panels. - Operators are to ensure that any equipment carried in the front bucket is properly secured from being accidentally dislodged. - Operators are to never raise the bucket over other persons. - Safety levers are to be locked at all times whenever the machine is not in use.	Plant Operator	2	4	S
	Contact with exposed moving parts	3	4	H	- All machinery is to be fitted with suitable guarding around parts that move or transmit power. - When receiving a wire rope on a drum or through sheaves, operators are to disengage the master clutch, idle the engine, and lock the brakes. Note: operators are to stop engines before working with ropes wound on front-mounted drums.	Plant Operator	1	4	S

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Burst Hydraulic Hose	Hazardous Chemical Spills	3	5	H	- Contain all spills with spill response kit to contain any spills. If spill is too large to contain contact site supervisor immediately to arrange larger control. - Ensure a suitable fire extinguisher is available where flammable chemicals are used onsite - When handling flammable chemicals ensure PPE is used as per the SDS - Follow SDS Register <i>Refer to Refuelling SWMS</i>		1	5	S
Faulty Equipment	Failure of Equipment	3	3	M	All Carsburg Operators are to complete daily pre-starts and have this initialled by site supervisor prior to starting any excavation work.	All Carsburg & Subcontracted Personnel	3	3	M
Reversing on Site		3	3	M	Carsburg vehicles may be required to engage a spotter to reverse on site. Check with Site specific requirements and adhere to Principle Contractors site terms and conditions. Drivers MUST wait until a spotter is engaged if site requires this action	All Carsburg & Subcontracted Personnel	3	3	M
Contact with Mobile Plant/trucks	Vehicle & Mobile Plant hazards	3	3	M	All mobile plant and machinery are to adhere to the exclusion zones for all trucks delivering materials to site under the direction of a spotter.	All Carsburg & Subcontracted Personnel	3	3	M

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SWMS:09

OPERATION OF CRAWLER TRACTORS (DOZERS)

Implementation and Monitoring

Carsburg Personnel -

Follow procedure and report inconsistencies.

Carsburg Manager/Supervisor -

Ensure only licenced / competent persons operate plant and monitor SWMS requirements on site using the Observation Log

References:

QLD Work Health & Safety Regulation 2011, Chapter 5

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Monitoring & Review of SWMS Use and Effectiveness

Observation Log	01	02	03	04	05	06
Initial:						
Date:						

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SWMS:10

EXCAVATION & TRENCHING

Sequence of basic job steps	Hazards	Potential Risk			Recommended action or procedure	By whom	Resultant Risk		
		L	C	R			L	C	R

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(High Risk Construction Work) Working on or near Pressurised Gas, Water and /or any other Mains Service. Locating Underground Services	Contact with underground services	4	5	H	- Prescribed information including the type of service, location of service, depth of the service, if the service is live if it is an electrical service, and any restrictions to be followed in doing the work, is to be obtained from the Principal Contractor or appropriate sources prior to excavation activities being undertaken. - The prescribed information is to be given to each person who is to do the excavation work at or near the location of the service. - The performance of the excavation work is to consider the restrictions to be followed in doing the work. - Underground services are to be identified by a detection service to determine depth and location.	Carsburg & Subcontracted Operators	1	5	S
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Job Address: 60A Gardens Point Rd, Brisbane City

(High Risk Construction Work) Working in or near a trench over 1.5 meters deep. Performing excavation and trenching work	Reducing the stability of nearby structure	3	5	H	- No work is to take place adjacent to a building or structure such that it may undermine or make unstable the building or structure. - A geotechnical engineer is to be engaged to determine (in writing) whether the excavation would reduce the stability of any nearby structures. - Controls specified by the engineer to prevent a persons exposure to collapse or partial collapse of the structure are to be implemented and maintained. - The excavation is to have appropriate controls in place to protect persons from being exposed to a collapse of the excavation. These controls are to include one of or a combination of the controls outlined below: - Shoring all sides of the trench by shields or another way (Note: shoring to be engineer designed);	All Carsburg & Subcontracted Personnel Geo-Technical Engineer	1	5	S
SWMS:10 EXCAVATION & TRENCHING									

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Sequence of basic job steps	Hazards	Potential Risk			Recommended action or procedure	By whom	Resultant Risk		
		L	C	R			L	C	R
Performing excavation and trenching work (Cont)	Excavation collapse	4	5	H	b. Benching all sides of the trench; c. Battering all sides of the trench; d. Having a geotechnical engineer approve in writing all sides if the trench as safe from collapse, and state in writing how long the approval lasts if there is no stated natural occurrence that could affect adversely the stability of the trench and state in writing the natural occurrences that could affect adversely the stability of the trench.	Competent Person Geo-Technical Engineer	1	5	S
	Falling objects	3	4	H	- Equipment and spoil is to be kept at a safe distance (at least 600mm) from the sides of trenches. - No person is to be in a trench whilst a load is being lifted over/into the trench. - Certificate of Competency (Dogger) required for slinging loads (e.g. pipes etc) to be lifted (where relevant). - Operators using earthmoving equipment in 'crane mode' are to be competent and hold applicable Certificate(s) of Competency. - Earthmoving plant used in crane mode to be certified for such use and to have load charts clearly displayed in cabin.	All Carsburg & Subcontracted Personnel Licenced Dogger Competent / Licenced Operators	2	4	S

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	Engulfment	3	5	H	- A site's emergency procedures should be used immediately if an engulfment happens. - The nominated person should take control of the site. If the nominated person is unavailable, another person, such as the alternative person nominated, should take charge. - People working onsite should avoid trying to immediately rescue the engulfed person. Impulsive actions can put rescuers at risk of engulfment, worsen the situation of the engulfed person, and delay emergency procedures, such as contacting emergency services.	All Carsburg & Subcontracted Personnel	3	5	S
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	Falling into the excavation	3	3	S	- Covers are to be placed on unattended excavations where applicable. - Barricades or hoardings (at least 900mm high) and signs are to be erected at least 1m from the edge where it is impracticable to cover the trench, to restrict access to the excavation. - Ladders are to be used for access and egress and spaced at no more than 9 metres apart within the trench and are to be secured. - If working in areas exposed to site traffic or public roads, concrete jersey barriers are to be erected. - Ensure travel alarms and flashing warning lights are working. - No person is to enter into the operating zone of mobile plant without first establishing contact with the operator. - Operators and workers are to wear high visibility vests. - An exclusion zone is to be established for pedestrian traffic around excavator/backhoe activities to keep unauthorised persons clear of the work area at all times. This includes the area behind an operating excavator where 'swing-back' occurs	Person in Control of Excavation / Site	1	3	M
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SWMS:10

EXCAVATION & TRENCHING

Sequence of basic job steps	Hazards	Potential Risk			Recommended action or procedure	By whom	Resultant Risk		
		L	C	R			L	C	R
	Inhalation of carbon monoxide	3	5	H	- Where there is the risk of inhalation of carbon monoxide or other impurity of the air, due to a person being in a trench / excavation, a confined space entry permit is to be used including performing air monitoring. - No person is to be in the trench when an excavator is in operation and there is the risk of inhalation of carbon monoxide. - Petrol driven machinery is not to be located in or near trenches.	All Carsburg & Subcontracted Personnel	1	5	S

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Faulty Equipment	Failure of Equipment	3	3	M	All Carsburg Operators are to complete daily pre-starts and have this initialled by site supervisor prior to starting any excavation work.	All Carsburg & Subcontracted Personnel	3	3	M
Reversing on Site		3	3	M	Carsburg vehicles may be required to engage a spotter to reverse on site. Check with Site specific requirements and adhere to Principle Contractors site terms and conditions. Drivers <u>MUST</u> wait until a spotter is engaged if site requires this action	All Carsburg & Subcontracted Personnel	3	3	M
Contact with Mobile Plant/trucks	Vehicle & Mobile Plant hazards	3	3	M	All mobile plant and machinery are to adhere to the exclusion zones for all trucks delivering materials to site under the direction of a spotter.	All Carsburg & Subcontracted Personnel	3	3	M

Implementation and Monitoring

Carsburg Personnel -

Carsburg Manager/Supervisor -

Follow procedure and report inconsistencies.

Monitor SWMS requirements on site using the Observation Log.

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QLD Work Health & Safety Regulation 2011, Chapters 5 & 6
 QLD Mobile Crane Code of Practice
 Code of Practice: Managing the Risks of Plant in the Workplace

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Date:						

SWMS:10

EXCAVATION & TRENCHING

Communication to Personnel:

I acknowledge that I have been trained in the SWMS listed above, the controls are clearly understood, my qualifications are current to undertake the activity and I will comply with the SWMS

Name	Signature	Date

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SWMS:11

MINOR DEMOLITION WORKS

Sequence of basic job steps	Hazards	Potential Risk			Recommended action or procedure	By whom	Resultant Risk		
		L	C	R			L	C	R

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(High Risk Construction Work) Work to demolish and/or alter the physical integrity of an existing structure. Planning to undertake demolition activities	- Failing to ensure Principal Contractor holds relevant certificate(s) of competency - Failing to ensure services have been disconnected - Asbestos exposure	4	5	H	- Prior to any minor demolition work being carried out, Carsburg Earthmoving is to ensure: - the Principal Contractor for the demolition works holds the relevant Demolition Certificate of Competency and that a designated Demolition Supervisor (on behalf of the PC) will be in attendance at all times whilst demolition work is being undertaken, - the Principal Contractor provides a copy of the Principal Contractor's Demolition Plan / SWMS, and that all relevant information regarding the demolition work is obtained, - the Principal Contractor has arranged for all services such as electricity, water, sewerage, gas etc, has been disconnected (written verification), and - Any asbestos has been removed from the structure by a licenced Asbestos Removalist.	Carsburg & Subcontracted Operators Principal Contractor Demolition Supervisor	2	4	S
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Undertaking demolition activities	- Falling objects - Projectiles - Structural collapse	4	5	H	- All minor demolition work is to be undertaken in strict accordance with the Principal Contractor's directions and Demolition Plan. - A demolition zone based on a Risk Assessment is to be established in consultation with the Principal Contractor before mechanical demolition commences, and no unauthorised persons are to be permitted to enter while demolition is in progress (minimum size zone of demolition is to be 15m). - Where a demolition zone cannot be established, written consent to the closure of the area during demolition is to be obtained by the Principal Contractor and copies kept on site. - All barricades, hoardings or gantries are to be in place before demolition work commences – refer to SWMS:03.	Carsburg & Subcontracted Operators Principal Contractor Demolition Supervisor	1	5	S
Faulty Equipment	Failure of Equipment	3	3	M	All Carsburg Operators are to complete daily pre-starts and have this initialled by site supervisor prior to starting any excavation work	All Carsburg & Subcontracted Personnel	3	3	M

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SWMS:11

MINOR DEMOLITION WORKS

Sequence of basic job steps	Hazards	Potential Risk			Recommended action or procedure	By whom	Resultant Risk		
		L	C	R			L	C	R
	Mobile plant hazards	4	5	H	Use of mobile plant is to be in accordance with SWMS:05 in addition to relevant SWMS(s) pertaining to the specific plant to be used.	Carsburg & Subcontracted Operators	1	5	S
Personal Protective Equipment Use	Exposure to various hazards	3	3	S	Hi Vis clothing, Hard Hat and Safety boots mandatory and must be worn on all sites. Hearing Protection, Eye Protection, Safety Gloves as well as Long sleeves and Long Pants to be worn when specified on site by Principal Contractor.	All Carsburg & Subcontracted Personnel	2	2	L

Implementation and Monitoring

Carsburg Personnel -

Carsburg Manager/Supervisor -

Follow procedure and report inconsistencies.

Ensure Principal Contractor holds relevant Demolition Certificate of Competency and has provided a SWMS. Monitor SWMS requirements on site using the Observation Log.

References:

QLD Work Health & Safety Regulation 2011, Chapters 5 & 6 & Parts 4.6 & 8.6

Code of Practice - Demolition

AS 2601 – The demolition of structures

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SWMS:12

WORKING NEAR TRAFFIC

Sequence of basic job steps	Hazards	Potential Risk			Recommended action or procedure	By whom	Resultant Risk		
		L	C	R			L	C	R

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High Risk Construction Work) Working near a road or track with moving vehicles and mobile plant. Short term works (Daytime only) – <i>Note: Short-term works are those that may be undertaken entirely during daylight hours and require that no signs or devices are left overnight.</i>	- Vehicle contact with people / vehicles / mobile plant - Excessive noise - Projectiles	3	5	H	- Where operations force changes to the flow of either pedestrian traffic and/or vehicular traffic, appropriate Traffic Management Planning is to be undertaken. - All personnel are to comply with any procedures or methods of work set down by the Principal Contractor and any Traffic Management Plan that may be prepared. - The following is a list of general requirements that need to be considered in any Traffic Management Plan (TMP) prepared during the course of short-term works. These requirements are particularly important on perimeter roadways and public access areas: - adequate warning for public vehicles of changes in the road surface or in driving conditions and of personnel or plant engaged in work near/on the road; - adequate instruction/guidance of road users safely through, around or past the work site; - clear delineation of works for the public; - clear and effective placement of signs; - covering of existing signs that do not apply during works; - provision of safe/convenient paths for pedestrians; - avoidance of unnecessary interference with traffic flow; - the wearing of high-visibility clothing by personnel working in the vicinity of moving traffic; and - ensuring that all signs and devices used for the short-term works are removed and conditions are returned to normal. - All workers who are required to work on, or adjacent to, a road are to be provided with training in the basic application of the <i>MUTCD, Part 3</i>.	Carsburg & Subcontracted Personnel Principal Contractor Authorised Traffic Controllers Traffic Management Company	1	5	S	
SWMS:12										
WORKING NEAR TRAFFIC										
Sequence of basic job steps	Hazards	Potential Risk	Recommended action or procedure				By whom	Resultant Risk		

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		L	C	R			L	C	R
	- Vehicle contact with people / vehicles / mobile plant - Excessive noise Projectiles	3	5	H	- Consideration is to be given to conducting work out of peak times (where practicable). This will eliminate (or at least minimise) the potential exposure of the public to the hazards associated with the work activities. - Signs and devices are to be erected and displayed by the Traffic Management Company before work commences in accordance with the TMP and the <i>MUTCD</i>. - Signs and devices are not to direct a motorist to disobey the traffic regulations, unless an authorised Traffic Controller is present to direct traffic. - Where the altered roadway/path cannot be controlled through the use of safety barriers and signage alone, then authorised Traffic Controllers must be provided to direct vehicles and pedestrians. Situations may include crossings, T-junctions and one-way streets. - Traffic Controllers must be trained, competent personnel who possess a Certificate of Competency in Traffic Control for the relevant state. Traffic Controllers are to wear ID cards at all times and ensure they are prominently displayed. - Appropriate signs are to be used by Traffic Controllers to aid in the direction of traffic (i.e. "Stop" / "Slow " signs etc.). - In addition to all mandatory items of PPE, personnel are to also wear high-visibility vests/clothing when working near traffic and / or road works. - Control measures for exposure to noise hazards are to be implemented in accordance with SWMS:15.	Carsburg & Subcontracted Personnel Principal Contractor Authorised Traffic Controllers	1	5	S

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Sequence of basic job steps	Hazards	Potential Risk			Recommended action or procedure	By whom	Resultant Risk		
		L	C	R			L	C	R
	- Vehicle contact with people / vehicles / mobile plant - Excessive noise - Projectiles				- Additional guidance for traffic management may be obtained from: - AS 1745.3: <i>Manual of Uniform Traffic Control Devices Part 3 – Traffic Control Devices for Work on Roads</i>; - SAA HB81.1: <i>Field Guide for Traffic Control at Works on Roads - Part 1 - Short-term Urban Works – Daytime Only</i>; - SAA HB81.2: <i>Field Guide for Traffic Control at Works on Roads - Part 2 - Short-term Rural Works – Daytime Only</i>; - SAA HB81.3: <i>Field Guide for Traffic Control at Works on Roads - Part 3 – Mobile Works</i>; - SAA HB81.4: <i>Field Guide for Traffic Control at Works on Roads - Part 4 - Short-term Night Works</i>; and - SAA HB81.5: <i>Field Guide for Traffic Control at Works on Roads - Part 5 – Works on Unsealed Roads</i>.	Carsburg & Subcontracted Personnel Principal Contractor Authorised Traffic Controllers			
Personal Protective Equipment Use	Exposure to various hazards	3	3	S	Hi Vis clothing, Hard Hat and Safety boots mandatory and must be worn on all sites. Hearing Protection, Eye Protection, Safety Gloves as well as Long sleeves and Long Pants to be worn when specified on site by Principal Contractor.	All Carsburg & Subcontracted Personnel	2	2	L

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Reversing on Site		3	3	M	Carsburg vehicles may be required to engage a spotter to reverse on site. Check with Site specific requirements and adhere to Principle Contractors site terms and conditions. Drivers MUST wait until a spotter is engaged if site requires this action	All Carsburg & Subcontracted Personnel	3	3	M
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Implementation and Monitoring

Carsburg & Subcontracted Personnel - Follow procedure, and report inconsistencies.

Carsburg Manager/Supervisor - Monitor SWMS controls on site using the Observation Log.

References:

QLD Work Health & Safety Act 2011, Part 2

QLD Work Health & Safety Regulation 2011, Chapter 6

QLD Code of Practice - Traffic Management for Construction or Maintenance Work

Manual of Uniform Traffic Control Devices Part 3 – Traffic Control Devices for Work on Roads

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WORKING NEAR TRAFFIC

I acknowledge that I have been trained in the SWMS listed above, the controls are clearly understood, my qualifications are current to undertake the activity and I will comply with the SWMS

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SWMS:13

LOADING & UNLOADING PLANT

Sequence of basic job steps	Hazards	Potential Risk			Recommended action or procedure	By whom	Resultant Risk		
		L	C	R			L	C	R
Loading mobile plant onto trailer or float	Inappropriate access / positioning of trailer / float on site	3	4	H	- Trailers / floats used to transport mobile plant are to access the site and park in the loading / unloading area(s) as designated by the Principal Contractor. - Trailers / floats are to be positioned on level and solid ground.	Truck Driver	1	4	S
	Striking other plant / structures	3	4	H	- Travel at a speed safe for the circumstances (and in accordance with site speed limit(s), i.e. maintain a speed which is safe for the condition of the roadway, grade, clearance, visibility and traffic etc. - Ensure sufficient room for vehicle to safely park to enable safe loading of earthmoving plant.	Truck Driver	1	4	S
	Failure to ensure trailer / float can safely carry the plant	3	5	H	Ensure the trailer / float has the necessary dimensions and capacity to safely carry the plant.	Truck Driver Licenced Plant Operator	1	5	S

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	- Falling objects - Striking persons	3	5	H	- If loading in areas exposed to site traffic or public roads, suitable traffic control is to be implemented in accordance with SWMS:12. - Ensure loading aids, including ramps and bridging materials are placed and secured in accordance with the trailer / float manufacturer's recommendations. - Ensure travel alarms and flashing warning lights are working. - Operators and workers are to wear high visibility vests. - An exclusion zone (minimum 10m) is to be established to keep unauthorised persons clear of the loading area at all times. A spotter is to be used for this purpose where possible. - Only licenced operators are to operate mobile plant (Refer to SWMS:05). - The SWL of the trailer / float is not to be exceeded.	Truck Driver Authorised Traffic Controller Licenced Plant Operator	1	5	S
Faulty Equipment	Failure of Equipment	3	3	M	All Carsburg Operators are to complete daily pre-starts and have this initialled by site supervisor prior to starting any excavation work	All Carsburg & Subcontracted Personnel	3	3	M
Contact with Mobile Plant/trucks	Vehicle & Mobile Plant Hazards	3	3	M	All mobile plant and machinery are to adhere to the exclusion zones for all trucks delivering materials to site under the direction of a spotter.	All Carsburg & Subcontracted Personnel	3	3	M

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SWMS:13

LOADING & UNLOADING PLANT

Sequence of basic job steps	Hazards	Potential Risk			Recommended action or procedure	By whom	Resultant Risk		
		L	C	R			L	C	R
	- Failing to use suitable load securing equipment - Failing to adequately secure load - Falls from height	3	5	H	- Once loaded, the plant is to be positioned and secured for transportation in accordance with specific manufacturer requirements and the <i>National Transport Commission (NTC) Australia's Load Restraint Guide</i>. <i>Note: Traffic Regulations also require that objects projecting either 1.2 metres or more beyond the front or rear of the vehicle, or 150mm on either side, is to have a visible red flag or object fastened to the projecting end. Unusually wide or long loads require a permit from the Police Department.</i> - Only competent persons are to secure mobile plant on a truck / float. - Suitable securing devices (chains etc) are to be used to secure the plant to the trailer / float such that movement of the plant during transportation is prevented. - Use designated access points only to access and egress from trucks and trailers / floats. Do not jump.	Truck Driver / Competent Person	1	5	S
	Contact with overhead powerlines	3	5	H	No part of the mobile plant or person / equipment etc, is to enter a power line exclusion zone. <i>Note: This is 3m minimum for low voltage, if unsure check with principal contractor. (Refer SWMS:04).</i>	Truck Driver Licenced Plant Operator	1	5	S
Unloading mobile plant from trailer or float on site	Inappropriate access / positioning of trailer / float on site	3	4	H	- Trailers / floats used to transport mobile plant are to access the site and park in the loading / unloading area(s) as designated by the Principal Contractor. - Trailers / floats are to be positioned on level and solid ground.	Truck Driver	1	4	S

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	Striking other plant / structures	3	4	H	- Travel at a speed safe for the circumstances (and in accordance with site speed limit(s), i.e. maintain a speed which is safe for the condition of the roadway, grade, clearance, visibility and traffic etc. - Ensure sufficient room for vehicle to safely park to enable safe unloading of earthmoving plant.	Truck Driver	1	4	S
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SWMS:13

LOADING & UNLOADING PLANT

Sequence of basic job steps	Hazards	Potential Risk			Recommended action or procedure	By whom	Resultant Risk		
		L	C	R			L	C	R
	- Inappropriate access / positioning of trailer / float to site - Striking other plant / structures	3	4	H	- Trailers / floats used to transport mobile plant are to access the site and park in the loading / unloading area(s) as designated by the Principal Contractor. - Trailers / floats are to be positioned on level and solid ground. - Ensure sufficient room for vehicle to safely park to enable safe unloading of earthmoving plant.	Truck Driver	1	4	S

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Site Speed Limits and hazard awareness.	- Falling objects - Striking persons - Falls from height	3	5	H	- If unloading in areas exposed to site traffic or public roads, suitable traffic control is to be implemented (refer to SWMS:12). - Ensure travel alarms and flashing warning lights are working. - Operators and workers are to wear high visibility vests. - An exclusion zone (minimum 10m) is to be established to keep unauthorised persons clear of the unloading area at all times. A spotter is to be used for this purpose where possible. - Only licenced operators are to operate mobile plant (Refer to SWMS:05). - Unloading aids, including ramps are to be placed and secured in accordance with the trailer / float manufacturer recommendations. - Securing devices are to be slackened and removed in a sequence which optimises safety. - Once the plant is moved off the trailer / float and halted at the designated position, loading aids including ramps, bridging materials and securing devices etc are to be suitably stowed. - Use designated access points only to access and egress from trucks and trailers / floats. Do not jump.	Truck Driver Authorised Traffic Controller Licenced Plant Operator	1	5	S
	Contact with overhead powerlines	4	5	H	No part of the mobile plant or person / equipment etc, is to enter a power line exclusion zone. <i>Note: This is 3m minimum for low voltage, if unsure check with principal contractor.</i> (Refer SWMS:04).	Truck Driver Licenced Plant Operator	1	5	S
	Collision hazards	3	3	S	Speed Limit of 5 klm per hour on site must be adhered to at all times. Flashing beacon and or orange hazard lights must be in use at all times on site.	All Carsburg & Subcontracted Personnel	2	2	L

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Personal Protective Equipment Use	Exposure to various hazards	3	3	S	Hi Vis clothing, Hard Hat and Safety boots mandatory and must be worn on all sites. Hearing Protection, Eye Protection, Safety Gloves as well as Long sleeves and Long Pants to be worn when specified on site by Principal Contractor.	All Carsburg & Subcontracted Personnel	2	2	L
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SWMS:13

LOADING & UNLOADING PLANT

Implementation and Monitoring

Carsburg & Subcontracted Personnel - Follow procedure, and report inconsistencies.

Carsburg Manager/Supervisor - Monitor SWMS controls on site using the Observation Log.

References:

QLD Work Health & Safety Regulation 2011, Chapter 5

Code of Practice: Managing the Risks of Plant in the Workplace

National Transport Commission (NTC) Australia - Load Restraint Guide, Section E-9

QLD Traffic Act & Regulations

Monitoring & Review of SWMS Use and Effectiveness

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LOADING & UNLOADING PLANT

I acknowledge that I have been trained in the SWMS listed above, the controls are clearly understood, my qualifications are current to undertake the activity and I will comply with the SWMS

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SWMS:14

WORKING OUTDOORS

Sequence of basic job steps	Hazards	Potential Risk			Recommended action or procedure	By whom	Resultant Risk		
		L	C	R			L	C	R

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Performing work outdoors	- Exposure to solar UV Radiation - Exposure to extreme temperatures	4	5	H	- Where it is not possible to undertake specific tasks in shaded areas, and no other control measures are possible / practical, appropriate personal protective equipment is to be worn by workers. Such equipment includes: - broad brimmed attachments for hard-hats; - suitable clothing (i.e. long-sleeve), with a collar (clothing with a tight weave, which is permeable (i.e. will allow evaporation of sweat), is recommended), <i>note: Shirts are to be worn at all times by workers on site;</i> - broad spectrum sunscreens rated at a factor of at least 15+, <i>note: Gel or alcohol based sunscreens can be used instead of cream based sunscreens which can leave a greasy residue, making it difficult to adequately grasp tools;</i> - safety sunglasses which comply with AS 1337 – Eye Protectors for Industrial Applications and AS 1067 – Sunglasses and Fashion Spectacles.. - Specific attention to protection from UV radiation is to be observed between the hours of 10am and 3 pm EST when working in non-shaded areas. It is recommended that, where possible, outdoor work is planned for the start and end of the day, otherwise work tasks should be rotated during hot weather.	All Carsburg Personnel	1	2	L
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Sequence of basic job steps	Hazards	Potential Risk			Recommended action or procedure	By whom	Resultant Risk		
		L	C	R			L	C	R

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Performing work outdoors (Cont)					- Workers are to be instructed in sun protection methods and methods for reducing the occurrence of heat induced illness including the use of appropriate protective clothing, hats, sunglasses and sunscreen, and the importance of maintaining adequate fluid levels throughout the day (especially water). - Workers are to be provided with information on self-screening for skin cancers and the detection of early warning signs. - All items of personal protective equipment supplied for protection against solar UV radiation are to comply with the relevant Australian Standards.				
Personal Protective Equipment Use	Exposure to various hazards	3	3	S	Hi Vis clothing, Hard Hat and Safety boots mandatory and must be worn on all sites. Hearing Protection, Eye Protection, Safety Gloves as well as Long sleeves and Long Pants to be worn when specified on site by Principal Contractor.	All Carsburg & Subcontracted Personnel	2	2	L

Implementation and Monitoring

Carsburg Personnel -

Follow procedure and report inconsistencies

Carsburg Manager/Supervisor -

Monitor SWMS controls on site using the Observation Log.

References:

QLD Work Health & Safety Act 2011, Part 2

Australian Standard AS 1337 – Eye Protectors for Industrial Applications

Australian Standard AS 1067 – Sunglasses and Fashion Spectacles

Monitoring & Review of SWMS Use and Effectiveness

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WORKING OUTDOORS

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SWMS:15

MANAGING NOISE HAZARDS

Sequence of basic job steps	Hazards	Potential Risk			Recommended action or procedure	By whom	Resultant Risk		
		L	C	R			L	C	R
Activities resulting in the emission of excessive noise	Exposure to excessive noise	3	3	S	Excessive Noise is defined as a level above – - an 8 hour continuous A-weighted sound pressure level of 85dB(A), or - an C-weighted peak sound pressure level of 140dB(C). - Carsburg is to ensure that all personnel are warned of the hazards relating to excessive noise exposure and that controls are implemented on site to minimise the effects of excessive noise. - Where personal protective equipment is identified as a control, specific details and instructions concerning its correct use and placement are to be given. - Hearing protection is to be worn at all times by Carsburg personnel when undertaking activities with or near noisy machinery or processes, and/or where deemed mandatory by the Principal Contractor. - Lost, damaged or worn hearing protective devices are to be removed from use and replaced.	All Carsburg & Subcontracted Personnel	2	2	L

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Personal Protective Equipment Use	Exposure to various hazards	3	3	S	Hi Vis clothing, Hard Hat and Safety boots mandatory and must be worn on all sites. Hearing Protection, Eye Protection, Safety Gloves as well as Long sleeves and Long Pants to be worn when specified on site by Principal Contractor.	All Carsburg & Subcontracted Personnel	2	2	L
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Implementation and Monitoring

Carsburg Personnel -

Follow procedure and report inconsistencies

Carsburg Manager/Supervisor -

Monitor SWMS controls on site using the Observation Log.

References:

QLD Work Health & Safety Act 2011, Part 2

QLD Work Health & Safety Regulation 2011, Part 4.1

QLD Code of Practice: Managing Noise & Preventing Hearing Loss at Work

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MANAGING NOISE HAZARDS

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MANAGING NOISE HAZARDS

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SWMS:16

USING POSTHOLE DIGGERS

Sequence of basic job steps	Hazards	Potential Risk			Recommended action or procedure	By whom	Resultant Risk		
		L	C	R			L	C	R
Preparing to operate posthole digger	Failure to identify faulty / damaged plant	4	5	H	- Pre-use inspections are to be undertaken (and recorded) of the posthole digger in accordance with manufacturer requirements. - Log books containing up-to-date details of posthole digger inspections, servicing and maintenance to be maintained. - Any posthole digger identified as being damaged or faulty is to be immediately removed from service and affixed with a “Danger Do Not Operate” tag.	Competent Operator	1	5	S
	Non-competent operators	4	5	H	- Only persons who are competent, having received suitable familiarisation training and who hold the relevant certificate(s) of competency / VOC evidence, are to operate posthole digger on site. - Posthole diggers are to be used and maintained in accordance with the manufacturer’s recommendations.	Carsburg Manager / Supervisor Competent Operator	1	5	S

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Operating posthole diggers	Contact with underground services	4	5	H	- Prescribed information including the type of service, location of service, depth of the service, if the service is live if it is an electrical service, and any restrictions to be followed in doing the work, is to be obtained from the Principal Contractor or appropriate sources prior to excavation activities being undertaken. - The prescribed information is to be given to each person who is to do the excavation work at or near the location of the service. - The performance of the excavation work is to consider the restrictions to be followed in doing the work. - Underground services are to be identified by a detection service to determine depth and location.	Carsburg Manager / Supervisor Competent Operator	1	5	S
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SWMS:16

USING POSTHOLE DIGGERS

Sequence of basic job steps	Hazards	Potential Risk			Recommended action or procedure	By whom	Resultant Risk		
		L	C	R			L	C	R
	Contact with moving parts / entanglement	4	5	H	- All machinery is to be fitted with suitable guarding around parts that move or transmit power. - Unauthorised persons are not to be permitted to approach the machine while it is operating. - A minimum of two (2) workers are to be on site while operating posthole diggers. - Operators are not to wear loose clothing and long hair is to be suitably secured. - No person is to stand, sit or otherwise position themselves on the frame of the posthole digger.	Carsburg Manager / Supervisor Competent Operator	1	5	S

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					- Workers are not to shovel, or otherwise remove, soil from the auger area while it is in operation. - The correct cutter points to suit digging conditions are to be used and maintained in good condition. - When operating a post driver, no part of the body is to be in a position that could result in contact with the weight.				
	Slips, trips & falls	3	4	H	- Postholes required to be left unattended are to be protected via the use of suitable barricading / signage or are to be provided with a fall protection cover that is: - able to withstand the impact of and safely support: - a fall onto it by any person, - plant which has not been restricted from access over the cover, - materials which could fall onto the cover, - be securely fixed in place to prevent it being accidentally moved or removed, - clearly marked / signed to indicate a fall hazard fall below (e.g. "Hole Under").	Competent Operator	2	3	M

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Personal Protective Equipment Use	Exposure to various hazards	3	3	S	Hi Vis clothing, Hard Hat and Safety boots mandatory and must be worn on all sites. Hearing Protection, Eye Protection, Safety Gloves as well as Long sleeves and Long Pants to be worn when specified on site by Principal Contractor.	All Carsburg & Subcontracted Personnel	2	2	L
Faulty Equipment	Failure of Equipment	3	3	M	All Carsburg Operators are to complete daily pre-starts and have this initialled by site supervisor prior to starting any excavation work	All Carsburg & Subcontracted Personnel	3	3	M

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Implementation and Monitoring

Carsburg Personnel -

Carsburg Manager/Supervisor -

Follow procedure and report inconsistencies

Monitor SWMS controls on site using the Observation Log.

References:

QLD Work Health & Safety Regulation 2011, Chapter 5

Code of Practice: Plant

RIRDC: 2006 - Farm Machinery Injury – Injuries Associated with Posthole Diggers

Monitoring & Review of SWMS Use and Effectiveness

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USING POSTHOLE DIGGERS

I acknowledge that I have been trained in the SWMS listed above, the controls are clearly understood, my qualifications are current to undertake the activity and I will comply with the SWMS

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SWMS:17

HOUSEKEEPING/CLEANING

Sequence of basic job steps	Hazards	Potential Risk			Recommended action or procedure	By whom	Resultant Risk		
		L	C	R			L	C	R
Ongoing and post work clean up	- Slips, Trips, Falls - Manual handling	3	4	H	- Regular clean ups of all work areas controlled by Carsburg Earthmoving are to be undertaken. - Rubbish is not to be allowed to accumulate so as to create a tripping hazard on site. - All materials are to be stacked or stored in areas designated by the Principal Contractor (where relevant). - All materials are to be stored in designated areas so as to enable clear access and reduce manual handling risks. - Machinery, plant and vehicles used by Carsburg personnel are to be parked or placed in areas on the site that do not restrict access or create a hazard for pedestrians or other vehicles. - Rubbish and waste is to be placed in the correct collection points nominated by the principal contractor (where relevant). - Amenities supplied by Carsburg will be cleaned daily.	All Carsburg & Subcontracted Personnel	1	4	S

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Personal Protective Equipment Use	Exposure to various hazards	3	3	S	Hi Vis clothing, Hard Hat and Safety boots mandatory and must be worn on all sites. Hearing Protection, Eye Protection, Safety Gloves as well as Long sleeves and Long Pants to be worn when specified on site by Principal Contractor.	All Carsburg & Subcontracted Personnel	2	2	L
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Implementation and Monitoring

Carsburg & Subcontracted Personnel -
 Carsburg Manager/Supervisor -

Follow procedure, and report inconsistencies
 Conduct inspections of Carsburg work area(s) and monitor SWMS controls on site using the Observation Log

References:

QLD Work Health & Safety Act 2011, Part 2
 QLD Work Health & Safety Regulation 2011, Part 3.2

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SWMS:17

HOUSEKEEPING/CLEANING

Communication to Personnel:

I acknowledge that I have been trained in the SWMS listed above, the controls are clearly understood, my qualifications are current to undertake the activity and I will comply with the SWMS

Name	Signature	Date

SWMS: 18

COMPACTION ROLLER

Sequence of basic job steps	Hazards	Potential Risk			Recommended action or procedure	By whom	Resultant Risk		
		L	C	R			L	C	R
Preparing to operate Compaction Roller on site	Failure to identify faulty / damaged plant & equipment	3	4	H	- Pre-use inspections are to be undertaken (and recorded) of the plant in accordance with manufacturer requirements. Refer to Appendix E. - Log books containing up-to-date details of plant inspections, servicing and maintenance to be maintained with the plant. - Plant identified as being damaged or faulty is to be immediately removed from service and affixed with a "Danger Do Not Operate" tag.	Plant Operator	2	4	S

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	Non-competent operators	3	4	H	- Only persons who are competent, having received suitable familiarisation training and who hold the relevant certificate(s) of competency / VOC evidence, are to operate plant on site. - Compaction Roller is to be operated in strict accordance with manufacturer requirements.	Carsburg Manager / Supervisor Plant Operator	2	4	S
Operating Compaction Roller on site	Inappropriate access	3	3	S	Operators must only access Compaction Roller via the manufacturer provided access point(s). Do not access / position yourself on sections of the plant that are not intended for access purposes. Do not jump from plant.	Plant Operator	2	3	M
	Roll-over	3	5	H	- The suitability of the road surface is to be determined by the operator prior to access. - Compaction Roller is to be fitted with roll-over and falling object protection and shatter-proof material in the windscreen and in viewing panels. - Compaction Roller is not to be operated on unstable ground or on inclines that exceed manufacturer recommendations or otherwise may pose a risk of the mobile plant rolling over. - Operators are to wear seat belts / restraints at all times when operating Compaction Roller. - Ensure the SWL is not exceeded. - Do not operate Compaction Roller near edges, drop-offs or floor penetrations without concrete jersey barrier edge protection.	Carsburg Manager Plant Operator	1	5	S

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COMPACTION ROLLER

Sequence of basic job steps	Hazards	Potential Risk			Recommended action or procedure	By whom	Resultant Risk		
		L	C	R			L	C	R
	Contact with overhead powerlines	4	5	H	No part of the Compaction Roller or person / equipment etc, is to enter a power line exclusion zone. <i>Note: This is 3m minimum for low voltage, if unsure check with principal contractor.</i>	Carsburg Manager / Supervisor Plant Operator	1	5	S
	Striking other plant / structures / workers	3	5	H	- If working in areas exposed to site traffic or public roads, concrete jersey barriers are to be erected. - Ensure travel alarms and flashing warning lights are working. - No person is to enter into the operating zone of Compaction Roller without first establishing contact with the operator. - Operators and workers are to wear high visibility vests.	Carsburg Manager / Supervisor Plant Operator	1	5	S

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					Where there is a potential for Compaction Roller to contact scaffolding, formwork, tilt-up panel bracing or similar load bearing structures, appropriate barricading must be installed / erected to prevent Compaction Roller access to the immediate area, or protect the structure from such collisions.	All Carsburg & Subcontracted Personnel			
	Contact with exposed moving parts	3	4	H	All machinery is to be fitted with suitable guarding around parts that move or transmit power.	Carsburg Manager	1	4	S
Leaving Compaction Roller unattended on site	- Unauthorised access / use - Failure to adequately secure plant	4	5	H	- Ensure plant is parked on level ground and is left in a suitably stowed configuration whenever it is unattended. - Remove keys from plant and secure to prevent unauthorised access / use.	Plant Operator	1	5	S
Faulty Equipment	Failure of Equipment	3	3	M	All Carsburg Operators are to complete daily pre-starts and have this initialled by site supervisor prior to starting any excavation work	All Carsburg & Subcontracted Personnel	3	3	M
Personal Protective Equipment Use	Exposure to various hazards	3	3	S	Hi Vis clothing, Hard Hat and Safety boots mandatory and must be worn on all sites. Hearing Protection, Eye Protection, Safety Gloves as well as Long sleeves and Long Pants to be worn when specified on site by Principal Contractor.	All Carsburg & Subcontracted Personnel	2	2	L

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WMS: 18

COMPACTION ROLLER

Follow procedure, and report inconsistencies
Conduct inspections of Carsburg work area(s) and monitor SWMS controls on site using the Observation Log

QLD Work Health & Safety Act 2011, Part 2
QLD Work Health & Safety Regulation 2011, Part 3.2

207 Elliott Road, PO Box 8, Banyo Qld 4014
Ph: 07 3267 8033 ALL HOURS
 Fax: 07 3267 8352
 sales@carsburgearthmoving.com.au
 www.carsburgearthmoving.com.au

Suppliers of Quality Sand & Gravel Quarry and Recycled Products
MACHINE & TRUCK HIRE – SAND & GRAVEL SUPPLY – PROJECT SOLUTIONS



Version 7b – July 2021

Site Specific Safety Plan – SAFE WORK METHOD STATEMENT 2021

Contractor/Client: Kane Constructions (QLD) P/L

Date: 30/11/2021

Job Address: 60A Gardens Point Rd, Brisbane City

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Monitoring & Review of SWMS Use and Effectiveness

01	02	03	04	05	06

WMS: 18

COMPACTION ROLLER

Communication to Personnel:

I acknowledge that I have been trained in the WMS listed above, the controls are clearly understood, my qualifications are current to undertake the activity and I will comply with the WMS

Name	Signature	Date

SWMS:19

REFUELLING MOBILE PLANT & MACHINERY.

Sequence of basic job steps	Hazards	Potential Risk			Recommended action or procedure	By whom	Resultant Risk		
		L	C	R			L	C	R

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Refuelling Mobile Plant & Machinery.	Handling Diesel – Skin Contact, Fumes	3	3	M	- Refuelling will be carried out in a well ventilated area, to avoid breathing in the fuel vapour. All workers will wash their hands and arms with water, prior to eating and drinking and when finished handling the diesel. The use of gloves is recommended when refuelling with diesel. Any contaminated clothing will be removed, all workers will read the MSDS prior to use. - Monitoring will be carried out visually and reviewed if circumstances change.	All Carsburg & Subcontracted Personnel	2	2	L
Burst Hydraulic Hose	Hazardous Chemical Spills	3	5	H	- Contain all spills with spill response kit to contain any spills. If spill is too large to contain contact site supervisor immediately to arrange larger control. - Ensure a suitable fire extinguisher is available where flammable chemicals are used onsite - When handling flammable chemicals ensure PPE is used as per the SDS - Follow SDS Register	All Carsburg Earthmoving Staff	1	5	S

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SWMS: 19

REFUELLING MOBILE PLANT & MACHINERY.

Personal Protective Equipment Use	Exposure to various hazards	3	3	S	Hi Vis clothing, Hard Hat and Safety boots mandatory and must be worn on all sites. Hearing Protection, Eye Protection, Safety Gloves as well as Long sleeves and Long Pants to be worn when specified on site by Principal Contractor.	All Carsburg & Subcontracted Personnel	2	2	L
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Implementation and Monitoring

Carsburg & Subcontracted Personnel:

Follow procedure and report inconsistencies

Carsburg Manager/Supervisor:

Undertake consultation with the Principal Contractor regarding refuelling and monitor SWMS controls on site using the Observation Log

References:

QLD Work Health & Safety Act 2011, Part 2

QLD Work Health & Safety Regulation 2011, Chapter 3, Div 10 & Chapter 12

Monitoring & Review of SWMS Use and Effectiveness

Observation Log	01	02	03	04	05	06
Initial:						
Date:						

Suppliers of Quality Sand & Gravel Quarry and Recycled Products
MACHINE & TRUCK HIRE – SAND & GRAVEL SUPPLY – PROJECT SOLUTIONS



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Job Address: 60A Gardens Point Rd, Brisbane City

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 ABN: 66 631 834 903	ITP No. 0000-ITP-CG-01	INSPECTION AND TESTING PLAN
	Project: QUT Open Air Sports Court	Clearing and grubbing

References:	Project specification and drawings	Prepared by:	V Hemsley	Date Prepared:	30/11/2021
Lot Location:	60A Gardens Point Rd, Brisbane City	Approved by:	N Carsburg	Date Approved:	30/11/2021

Item No	Check Item	Description	Check	Witness Point	Hold Point	Conforming
1.	Check Item	Tree protection zones. All tree protection zones have been established and checked by the Principal Contractor.				
2.	Hold point	Fauna spotter/catcher. The Principal Contractor must confirm that all requirements from other plans have been met including Fauna spotter/catcher inspections and reports.				
3.	Hold point	Arborist. The Principal Contractor must confirm that all requirements from other plans have been met including Arborist inspections and reports.				
4.	Check item	Separation of weed species and trees not suitable for mulch re-use. Trees that are not suitable for mulching and re-use in the landscaping works are to be separated and disposed of separately.				
5.	Check item	Completion. All clearing and grubbing works have been completed in accordance with the drawings.				

Lot Verification & Conformance - All conformance data including survey, materials and construction completed and attached. Any NCR's rectified and closed.

Contractors Representative	Date	Clients Representative	Date
-----------------------------------	-------------	-------------------------------	-------------

Carsburg Civil Pty Ltd

Order

A.B.N. 66 631 834 903
A.C.N. 631 834 903

Purchase #: A-17133/VW002
Date: 16/12/2021
Ship Via:
Page: 1

Ship To:

Pinkenba Operations Pty Ltd
45 Eagle Farm Rd
Pinkenba Qld 4008

Carsburg Civil Pty Ltd

Description

Amount Code

Supply 1007 Tonne Type 2.5 @ \$14.70/Tonne (as per Quote)
Deliver to 60A Gardens Point Rd, City 21/12/2021
Contact Dave 0407 143 169

Your Invoice #:	Supplier ABN: 93 646 231 138	Freight:	\$0.00 GST
Shipping Date:	Terms: Net 30	GST:	
COMMENT	CODE	RATE	GST SALE AMOUNT
		Total Inc GST:	
		Amount Applied:	\$0.00
		Balance Due:	

Flexihire Pty Ltd

Service History Listing - Details

Date: 21/12/2021

Time: 10:10:08

For Equipment Code From: 11001012 To: 11001012

For Job Category From: All To: All

For Serial No From: All To: All

For Mechanic From: All To: All

For Job Status From: All To: All

For Service Date From: All To: All

For Part No From: All To: All

For Job Type: All

For Owner Option From: All To: All

For Branch Code From: All To: All

For Service Job No. From: All To: All

For Reason Code From: All To: All

Job Code	Description	Job Type	Job Category	Service Date	Cust. Code	Call Reason	Mechanic	Hour Meter	Inv. No
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Equip Code: 11001012 Description: Registration: C91051 Registration Expiry: 11/02/2021
 Make: DYNAPAC Model: CA302D Serial No: 10000116L0A006820

392659 PRE HIRE INSPECTION Inspection COM ROLL 17/12/2021 Inspection R SMITH 4499

Type	Parts/Mechanics	Date	Description	Qty	Discount	Retail	Reason	Warranty Expiry	SA Code	PO/TS No
				1.00		\$0.00				
				Job Total:		\$0.00				

98048 250HR SERVICE Internal DYNAPAC 16/12/2021 Flexihire Scheduled Maintenance R SMITH 4499

Type	Parts/Mechanics	Date	Description	Qty	Discount	Retail	Reason	Warranty Expiry	SA Code	PO/TS No
Part	FF5612	16/12/2021	FUEL FILTER	1.00	0	\$0.00	SM		101415SR	135425
Part	FS19732	16/12/2021	FUEL WATER SEPARATOR	1.00	0	\$0.00	SM		101415SR	135426
Part	LF16015	16/12/2021	LUBE FILTER	1.00	0	\$0.00	SM		101415SR	135424
				Job Total:		\$0.00				

Note : CARRIED OUT 250HR SERVICE
 -REPLACED ENGINE OIL & FILTER
 -REPLACED FUEL FILTER
 -REPLACED FUEL/WATER SEPARATOR
 -CHECKED OVER AND GREASED MACHINE
 -TESTED FUNCTIONS ALL OKAY

CARRIED OUT PHI

363661 PRE HIRE INSPECTION Inspection COM ROLL 28/07/2021 Inspection M JONES 4438

Type	Parts/Mechanics	Date	Description	Qty	Discount	Retail	Reason	Warranty Expiry	SA Code	PO/TS No
				1.00		\$0.00				
				Job Total:		\$0.00				

91992 new battery required Internal DYNAPAC 20/07/2021 92110 Repair A Gacik 4436

Type	Parts/Mechanics	Date	Description	Qty	Discount	Retail	Reason	Warranty Expiry	SA Code	PO/TS No
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Job Code	Description		Job Type	Job Category	Service Date	Cust. Code	Call Reason	Mechanic	Hour Meter	Inv. No
Part	125129	22/07/2021	N120L MF Century		1.00	0	\$0.00	RE	101416SR	284241
Job Total:							\$0.00			
Note : travel to site to replace battery, gps drawing correct amount of current , machine sits for a lengthy period before use, causing battery discharge,										
356004	PRE HIRE INSPECTION		Inspection	COM ROLL	21/06/2021		Inspection	P Conray	4429	
Type	Parts/Mechanics	Date	Description		Qty	Discount	Retail Reason	Warranty Expiry	SA Code	PO/TS No
					1.00		\$0.00			
Job Total:							\$0.00			
337743	PRE HIRE INSPECTION		Inspection	COM ROLL	16/03/2021		Inspection	P Conray	4327	
Type	Parts/Mechanics	Date	Description		Qty	Discount	Retail Reason	Warranty Expiry	SA Code	PO/TS No
					1.00		\$0.00			
Job Total:							\$0.00			
329675	PRE HIRE INSPECTION		Inspection	COM ROLL	11/02/2021		Inspection	B Mackenzie	4315	
Type	Parts/Mechanics	Date	Description		Qty	Discount	Retail Reason	Warranty Expiry	SA Code	PO/TS No
					1.00		\$0.00			
Job Total:							\$0.00			
85376	BOOT LATCH REQUIRED		Internal	DYNAPAC	11/02/2021	Flexihire	Repair	B Mackenzie	4315	
Type	Parts/Mechanics	Date	Description		Qty	Discount	Retail Reason	Warranty Expiry	SA Code	PO/TS No
Part	9010371	16/02/2021	BONNET LOCK		1.00	0	\$0.00	RE	101403SR	275517
Job Total:							\$0.00			
324212	PRE HIRE INSPECTION		Inspection	COM ROLL	13/01/2021		Inspection	B Mackenzie	4303	
Type	Parts/Mechanics	Date	Description		Qty	Discount	Retail Reason	Warranty Expiry	SA Code	PO/TS No
					1.00		\$0.00			
Job Total:							\$0.00			
315795	PRE HIRE INSPECTION		Inspection	COM ROLL	12/11/2020		Inspection	B Mackenzie	4278	
Type	Parts/Mechanics	Date	Description		Qty	Discount	Retail Reason	Warranty Expiry	SA Code	PO/TS No
					1.00		\$0.00			
Job Total:							\$0.00			

Job Code	Description		Job Type	Job Category	Service Date	Cust. Code	Call Reason	Mechanic	Hour Meter	Inv. No
313921	PRE HIRE INSPECTION		Inspection	COM ROLL	3/11/2020		Inspection	B Mackenzie	4278	
Type	Parts/Mechanics	Date	Description	Qty	Discount		Retail Reason	Warranty Expiry	SA Code	PO/TS No
				1.00			\$0.00			
				Job Total:			\$0.00			
310365	PRE HIRE INSPECTION		Inspection	COM ROLL	26/10/2020		Inspection	B Mackenzie	4271	
Type	Parts/Mechanics	Date	Description	Qty	Discount		Retail Reason	Warranty Expiry	SA Code	PO/TS No
				1.00			\$0.00			
				Job Total:			\$0.00			
80320	500HR SERVICE REQUIRED		Internal	DYNAPAC	10/09/2020	Flexihire	Scheduled Maintenance	B Mackenzie	4263	
Type	Parts/Mechanics	Date	Description	Qty	Discount		Retail Reason	Warranty Expiry	SA Code	PO/TS No
Part	AF25142	16/09/2020	AIR FILTER	1.00	0		\$0.00 SM		101403SR	268794
Part	AF25143	16/09/2020	AIR FILTER	1.00	0		\$0.00 SM		101403SR	268794
Part	FF5612	16/09/2020	FUEL FILTER	1.00	0		\$0.00 SM		101403SR	268794
Part	FS19732	16/09/2020	FUEL WATER SEPARATOR	1.00	0		\$0.00 SM		101403SR	268794
Part	LF16015	16/09/2020	LUBE FILTER	1.00	0		\$0.00 SM		101403SR	268794
Part	PARTS NONINV	18/09/2020	BEARING 6203-2NSE	2.00	0		\$0.00 SM		101403SR	269155
				Job Total:			\$0.00			
300534	PRE HIRE INSPECTION		Inspection	COM ROLL	25/08/2020		Inspection	B Mackenzie	4262	
Type	Parts/Mechanics	Date	Description	Qty	Discount		Retail Reason	Warranty Expiry	SA Code	PO/TS No
				1.00			\$0.00			
				Job Total:			\$0.00			
299624	PRE HIRE INSPECTION		Inspection	COM ROLL	20/08/2020		Inspection	B Mackenzie	4255	
Type	Parts/Mechanics	Date	Description	Qty	Discount		Retail Reason	Warranty Expiry	SA Code	PO/TS No
				1.00			\$0.00			
				Job Total:			\$0.00			
298772	PRE HIRE INSPECTION		Inspection	COM ROLL	13/08/2020		Inspection	B Mackenzie	4252	
Type	Parts/Mechanics	Date	Description	Qty	Discount		Retail Reason	Warranty Expiry	SA Code	PO/TS No
				1.00			\$0.00			

Job Code	Description	Job Type	Job Category	Service Date	Cust. Code	Call Reason	Mechanic	Hour Meter	Inv. No
Job Total:						\$0.00			
297279	PRE HIRE INSPECTION	Inspection	COM ROLL	11/08/2020		Inspection	B Mackenzie	4249	
Type	Parts/Mechanics	Date	Description	Qty	Discount	Retail Reason	Warranty Expiry	SA Code	PO/TS No
				1.00		\$0.00			
				Job Total:		\$0.00			
290268	PRE HIRE INSPECTION	Inspection	COM ROLL	13/07/2020		Inspection	B Mackenzie	4244	
Type	Parts/Mechanics	Date	Description	Qty	Discount	Retail Reason	Warranty Expiry	SA Code	PO/TS No
				1.00		\$0.00			
				Job Total:		\$0.00			
289522	PRE HIRE INSPECTION	Inspection	COM ROLL	24/06/2020		Inspection	B Mackenzie	4230	
Type	Parts/Mechanics	Date	Description	Qty	Discount	Retail Reason	Warranty Expiry	SA Code	PO/TS No
				1.00		\$0.00			
				Job Total:		\$0.00			
285569	PRE HIRE INSPECTION	Inspection	COM ROLL	2/06/2020		Inspection	B Mackenzie	4225	
Type	Parts/Mechanics	Date	Description	Qty	Discount	Retail Reason	Warranty Expiry	SA Code	PO/TS No
				1.00		\$0.00			
				Job Total:		\$0.00			
281685	PRE HIRE INSPECTION	Inspection	COM ROLL	14/05/2020		Inspection	B Mackenzie	4215	
Type	Parts/Mechanics	Date	Description	Qty	Discount	Retail Reason	Warranty Expiry	SA Code	PO/TS No
				1.00		\$0.00			
				Job Total:		\$0.00			
76481	REPLACE BATTERY	Internal	DYNAPAC	14/05/2020	83512	Repair	B Mackenzie	4215	
Type	Parts/Mechanics	Date	Description	Qty	Discount	Retail Reason	Warranty Expiry	SA Code	PO/TS No
Part	125104	15/05/2020	N120 MF Century	1.00	0	\$0.00 RE		101403SR	121334
Job Total:						\$0.00			

Job Code	Description		Job Type	Job Category	Service Date	Cust. Code	Call Reason	Mechanic	Hour Meter	Inv. No
274275	PRE HIRE INSPECTION		Inspection	COM ROLL	9/04/2020		Inspection	B Mackenzie	4204	
Type	Parts/Mechanics	Date	Description	Qty	Discount		Retail Reason	Warranty Expiry	SA Code	PO/TS No
				1.00			\$0.00			
				Job Total:			\$0.00			
75426	NEW BATTERY ISOLATOR REQUIRED		Internal	DYNAPAC	8/04/2020	Flexihire	Repair	B Mackenzie	4204	
Type	Parts/Mechanics	Date	Description	Qty	Discount		Retail Reason	Warranty Expiry	SA Code	PO/TS No
Part	PARTS NONINV	8/04/2020	ACX3427 4 POLE BATTERY ISLOATOR	1.00	0		\$0.00 RE		101403SR	261664
				Job Total:			\$0.00			
273565	PRE HIRE INSPECTION		Inspection	COM ROLL	18/03/2020		Inspection	B Mackenzie	4179	
Type	Parts/Mechanics	Date	Description	Qty	Discount		Retail Reason	Warranty Expiry	SA Code	PO/TS No
				1.00			\$0.00			
				Job Total:			\$0.00			
271584	PRE HIRE INSPECTION		Inspection	COM ROLL	9/03/2020		Inspection	B Mackenzie	4177	
Type	Parts/Mechanics	Date	Description	Qty	Discount		Retail Reason	Warranty Expiry	SA Code	PO/TS No
				1.00			\$0.00			
				Job Total:			\$0.00			
269879	PRE HIRE INSPECTION		Inspection	COM ROLL	24/02/2020		Inspection	B Mackenzie	4176	
Type	Parts/Mechanics	Date	Description	Qty	Discount		Retail Reason	Warranty Expiry	SA Code	PO/TS No
				1.00			\$0.00			
				Job Total:			\$0.00			
269441	PRE HIRE INSPECTION		Inspection	COM ROLL	19/02/2020		Inspection	B Mackenzie	4176	
Type	Parts/Mechanics	Date	Description	Qty	Discount		Retail Reason	Warranty Expiry	SA Code	PO/TS No
				1.00			\$0.00			
				Job Total:			\$0.00			
266599	PRE HIRE INSPECTION		Inspection	COM ROLL	30/01/2020		Inspection	B Mackenzie	4175	
Type	Parts/Mechanics	Date	Description	Qty	Discount		Retail Reason	Warranty Expiry	SA Code	PO/TS No

Job Code	Description	Job Type	Job Category	Service Date	Cust. Code	Call Reason	Mechanic	Hour Meter	Inv. No
				1.00		\$0.00			
				Job Total:		\$0.00			
67909	KESTREL BRAKE TEST BONNET STR	Internal	DYNAPAC	16/07/2019	Flexihire	Repair	B Mackenzie	3810	
Type	Parts/Mechanics	Date	Description	Qty	Discount	Retail Reason	Warranty Expiry	SA Code	PO/TS No
Part	2450501YB	22/07/2019	LOCKOUT LEVER YELLOW	1.00	0	\$0.00 RE		101403SR	115120
Part	382384	22/07/2019	GAS STRUT ENGINE BONNET	2.00	0	\$0.00 RE		101403SR	115118
Part	75910BX	22/07/2019	MASTER SWITCH 12V 125A	1.00	0	\$0.00 RE		101403SR	115119
Part	CONTRACTORS	18/07/2019	BRAKE TEST	1.00	0	\$0.00 RE		101403SR	250630
Part	FIRSTAKIT VEH	16/07/2019	FIRST AID KIT - VEHICLE	1.00	0	\$0.00 RE		101403SR	250613
Part	UC1700	16/07/2019	WHEEL CHOCKS	2.00	0	\$0.00 RE		101403SR	250613
				Job Total:		\$0.00			
Note : HYDRAULCIC HOSE WAS ALSO FIXED ON THIS MACHINE ACCIDENTLY PUT ON 11002042									
233164	PRE HIRE INSPECTION	Inspection	COM ROLL	2/07/2019		Inspection	B Mackenzie	3810	
Type	Parts/Mechanics	Date	Description	Qty	Discount	Retail Reason	Warranty Expiry	SA Code	PO/TS No
				1.00		\$0.00			
				Job Total:		\$0.00			
231357	PRE HIRE INSPECTION	Inspection	COM ROLL	15/06/2019		Inspection	B Mackenzie	3800	
Type	Parts/Mechanics	Date	Description	Qty	Discount	Retail Reason	Warranty Expiry	SA Code	PO/TS No
				1.00		\$0.00			
				Job Total:		\$0.00			
230942	PRE HIRE INSPECTION	Inspection	COM ROLL	12/06/2019		Inspection	B Mackenzie	3795	
Type	Parts/Mechanics	Date	Description	Qty	Discount	Retail Reason	Warranty Expiry	SA Code	PO/TS No
				1.00		\$0.00			
				Job Total:		\$0.00			
229900	PRE HIRE INSPECTION	Inspection	COM ROLL	4/06/2019		Inspection	B Mackenzie	3789	
Type	Parts/Mechanics	Date	Description	Qty	Discount	Retail Reason	Warranty Expiry	SA Code	PO/TS No
				1.00		\$0.00			
				Job Total:		\$0.00			

Job Code	Description		Job Type	Job Category	Service Date	Cust. Code	Call Reason	Mechanic	Hour Meter	Inv. No
229656	PRE HIRE INSPECTION		Inspection	COM ROLL	3/06/2019		Inspection	B Mackenzie	3789	
Type	Parts/Mechanics	Date	Description	Qty	Discount	Retail	Reason	Warranty Expiry	SA Code	PO/TS No
				1.00		\$0.00				
				Job Total:		\$0.00				
66334	SERVICE REQUIRED 250hr		Internal	DYNAPAC	29/05/2019	Flexihire	Scheduled Maintenance	B Mackenzie	3785	
Type	Parts/Mechanics	Date	Description	Qty	Discount	Retail	Reason	Warranty Expiry	SA Code	PO/TS No
Part	FF5612	3/06/2019	FUEL FILTER	1.00	0	\$0.00	SM		101403SR	113740
Part	FS19732	3/06/2019	FUEL WATER SEPARATOR	1.00	0	\$0.00	SM		101403SR	113741
Part	LF16015	3/06/2019	LUBE FILTER	1.00	0	\$0.00	SM		101403SR	113739
				Job Total:		\$0.00				
66019	new cab mounts required		Internal	DYNAPAC	20/05/2019	Flexihire	Repair	B Mackenzie	3785	
Type	Parts/Mechanics	Date	Description	Qty	Discount	Retail	Reason	Warranty Expiry	SA Code	PO/TS No
Part	374606	28/05/2019	SHOCK ABSORBER (GREEN) CAB MOUNT	2.00	0	\$0.00	RE		101403SR	113607
Part	374607	28/05/2019	SHOCK ABSORBER (YELLOW) CAB MOUNT	2.00	0	\$0.00	RE		101403SR	113608
				Job Total:		\$0.00				
225325	PRE HIRE INSPECTION		Inspection	COM ROLL	7/05/2019		Inspection	B Mackenzie	3785	
Type	Parts/Mechanics	Date	Description	Qty	Discount	Retail	Reason	Warranty Expiry	SA Code	PO/TS No
				1.00		\$0.00				
				Job Total:		\$0.00				
65665	NEW INNER AND OUTER AIR FILTER		Internal	DYNAPAC	7/05/2019	Flexihire	Repair	B Mackenzie	3785	
Type	Parts/Mechanics	Date	Description	Qty	Discount	Retail	Reason	Warranty Expiry	SA Code	PO/TS No
Part	394686	9/05/2019	AIR FILTER OUTER	1.00	0	\$0.00	RE		101403SR	247728
Part	394687	9/05/2019	AIR FILTER INNER	1.00	0	\$0.00	RE		101403SR	247728
				Job Total:		\$0.00				
218177	PRE HIRE INSPECTION		Inspection	COM ROLL	12/03/2019		Inspection	B Mackenzie	3776	
Type	Parts/Mechanics	Date	Description	Qty	Discount	Retail	Reason	Warranty Expiry	SA Code	PO/TS No
				1.00		\$0.00				

Job Code	Description	Job Type	Job Category	Service Date	Cust. Code	Call Reason	Mechanic	Hour Meter	Inv. No
Job Total:						\$0.00			
64477	1000HR SERVICE REQUIRED	Internal	DYNAPAC	12/03/2019	Flexihire	Scheduled Maintenance	B Mackenzie	3776	
Type	Parts/Mechanics	Date	Description	Qty	Discount	Retail Reason	Warranty Expiry	SA Code	PO/TS No
Part	394686	20/03/2019	AIR FILTER OUTER	1.00	0	\$0.00 SM		101403SR	111577
Part	394687	20/03/2019	AIR FILTER INNER	1.00	0	\$0.00 SM		101403SR	111576
Part	908502	20/03/2019	FILTER CABIN	1.00	0	\$0.00 SM		101403SR	111575
Part	FF5612	20/03/2019	FUEL FILTER	1.00	0	\$0.00 SM		101403SR	111574
Part	FS19732	20/03/2019	FUEL WATER SEPARATOR	1.00	0	\$0.00 SM		101403SR	111572
PART	HF6553	20/03/2019	HYDRAULIC FILTER	2.00	0	\$0.00 SM		101403SR	111573
PART	LABOUR	20/03/2019	LABOUR	1.00	0	\$0.00 SM		101403SR	111578
Part	LF16015	20/03/2019	LUBE FILTER	1.00	0	\$0.00 SM		101403SR	111571
Job Total:						\$0.00			
Note : drained all hydraulic oil drum drive and cartridge oils diff and planetary oils aswell									
209901	PRE HIRE INSPECTION	Inspection	COM ROLL	8/01/2019		Inspection	B Mackenzie	3594	
Type	Parts/Mechanics	Date	Description	Qty	Discount	Retail Reason	Warranty Expiry	SA Code	PO/TS No
				1.00		\$0.00			
Job Total:						\$0.00			
63088	CAB MOUNTS REQUIRED SOON	Internal	DYNAPAC	20/12/2018	91261	Repair	B Mackenzie	3592	
Type	Parts/Mechanics	Date	Description	Qty	Discount	Retail Reason	Warranty Expiry	SA Code	PO/TS No
PART	LABOUR	8/01/2019	LABOUR	1.00	0	\$0.00 RE		101403SR	109376
Job Total:						\$0.00			
208761	PRE HIRE INSPECTION	Inspection	COM ROLL	19/12/2018		Inspection	B Mackenzie	3592	
Type	Parts/Mechanics	Date	Description	Qty	Discount	Retail Reason	Warranty Expiry	SA Code	PO/TS No
				1.00		\$0.00			
Job Total:						\$0.00			
207262	PRE HIRE INSPECTION	Inspection	COM ROLL	10/12/2018		Inspection	B Mackenzie	3588	
Type	Parts/Mechanics	Date	Description	Qty	Discount	Retail Reason	Warranty Expiry	SA Code	PO/TS No
				1.00		\$0.00			

Job Code	Description	Job Type	Job Category	Service Date	Cust. Code	Call Reason	Mechanic	Hour Meter	Inv. No
Job Total:						\$0.00			
202512	PRE HIRE INSPECTION	Inspection	COM ROLL	21/11/2018		Inspection	B Mackenzie	3586	
Type	Parts/Mechanics	Date	Description	Qty	Discount	Retail Reason	Warranty Expiry	SA Code	PO/TS No
				1.00		\$0.00			
Job Total:						\$0.00			
62464	14 Drum Rubber Required.	Internal	DYNAPAC	21/11/2018	Flexihire	Repair	B Mackenzie	3586	
Type	Parts/Mechanics	Date	Description	Qty	Discount	Retail Reason	Warranty Expiry	SA Code	PO/TS No
Part	801187	29/11/2018	DRUM MOUNT	14.00	0	\$0.00 RE		101403SR	108540
Job Total:						\$0.00			
62565	replace battery and fire extinguisher	Internal	DYNAPAC	20/11/2018	Flexihire	Repair	B Mackenzie	3586	
Type	Parts/Mechanics	Date	Description	Qty	Discount	Retail Reason	Warranty Expiry	SA Code	PO/TS No
Part	125104	26/11/2018	N120 MF Century	1.00	0	\$0.00 RE		101403SR	108510
Job Total:						\$0.00			
Note : fire extinguisher was one off the bench in the Workshop									
62405	NEW RED KNOB AND E STOP SWITCH	Internal	DYNAPAC	17/11/2018	Flexihire	Repair	B Mackenzie	3586	
Type	Parts/Mechanics	Date	Description	Qty	Discount	Retail Reason	Warranty Expiry	SA Code	PO/TS No
Part	903876	19/11/2018	CONNECTOR	1.00	0	\$0.00 RE		101403SR	108260
Part	932056	19/11/2018	KNOB RED HAZARD	1.00	0	\$0.00 RE		101403SR	108261
Part	ACX3438	19/11/2018	EMERGENCY STOP SWITCH	1.00	0	\$0.00 RE		101403SR	108262
Job Total:						\$0.00			
192979	PRE HIRE INSPECTION	Inspection	COM ROLL	12/09/2018		Inspection	B Mackenzie	3535	
Type	Parts/Mechanics	Date	Description	Qty	Discount	Retail Reason	Warranty Expiry	SA Code	PO/TS No
				1.00		\$0.00			
Job Total:						\$0.00			
191464	PRE HIRE INSPECTION	Inspection	COM ROLL	29/08/2018		Inspection	B Mackenzie	3529	
Type	Parts/Mechanics	Date	Description	Qty	Discount	Retail Reason	Warranty Expiry	SA Code	PO/TS No
				1.00		\$0.00			

Job Code	Description		Job Type	Job Category	Service Date	Cust. Code	Call Reason		Mechanic	Hour Meter	Inv. No
					Job Total:		\$0.00				
189533	PRE HIRE INSPECTION		Inspection	COM ROLL	17/08/2018		Inspection		B Mackenzie	3525	
Type	Parts/Mechanics	Date	Description	Qty	Discount		Retail	Reason	Warranty Expiry	SA Code	PO/TS No
					1.00		\$0.00				
					Job Total:		\$0.00				
188049	PRE HIRE INSPECTION		Inspection	COM ROLL	9/08/2018		Inspection		B Mackenzie	3523	
Type	Parts/Mechanics	Date	Description	Qty	Discount		Retail	Reason	Warranty Expiry	SA Code	PO/TS No
					1.00		\$0.00				
					Job Total:		\$0.00				
60113	500HR SERVICE		Internal	DYNAPAC	8/08/2018	42829	Repair		B Mackenzie	3529	
Type	Parts/Mechanics	Date	Description	Qty	Discount		Retail	Reason	Warranty Expiry	SA Code	PO/TS No
Part	394686	13/08/2018	AIR FILTER OUTER Use	1.00	0		\$0.00	RE		101403SR	104918
Part	394687	13/08/2018	AIR FILTER INNER Use	1.00	0		\$0.00	RE		101403SR	104917
Part	FF5612	13/08/2018	Fuel Filter	1.00	0		\$0.00	RE		101403SR	104916
Part	FS19732	13/08/2018	FUEL SEPARATOR	1.00	0		\$0.00	RE		101403SR	104915
Part	LF16015	13/08/2018	OIL FILTER	1.00	0		\$0.00	RE		101403SR	104914
					Job Total:		\$0.00				
59991	DRUM RUBBERS REQUIRED SOON		Internal	DYNAPAC	7/08/2018	Flexihire	Repair		B Mackenzie	3523	
Type	Parts/Mechanics	Date	Description	Qty	Discount		Retail	Reason	Warranty Expiry	SA Code	PO/TS No
PART	LABOUR	27/08/2018	LABOUR	1.00	0		\$0.00	RE		101403SR	105423
					Job Total:		\$0.00				
Note : MACHINE TRANSFERRED TO MORANBAH NO RUBBERS REPLACED YET IN EMERALD											
184159	PRE HIRE INSPECTION		Inspection	COM ROLL	14/07/2018		Inspection		B Mackenzie	3452	
Type	Parts/Mechanics	Date	Description	Qty	Discount		Retail	Reason	Warranty Expiry	SA Code	PO/TS No
					1.00		\$0.00				
					Job Total:		\$0.00				

Job Code	Description		Job Type	Job Category	Service Date	Cust. Code	Call Reason	Mechanic	Hour Meter	Inv. No
173303	PRE HIRE INSPECTION		Inspection	COM ROLL	10/05/2018		Inspection	B Mackenzie	3208	
Type	Parts/Mechanics	Date	Description		Qty	Discount	Retail Reason	Warranty Expiry	SA Code	PO/TS No
					1.00		\$0.00			
					Job Total:		\$0.00			
172149	PRE HIRE INSPECTION		Inspection	COM ROLL	27/04/2018		Inspection	B Mackenzie	3205	
Type	Parts/Mechanics	Date	Description		Qty	Discount	Retail Reason	Warranty Expiry	SA Code	PO/TS No
					1.00		\$0.00			
					Job Total:		\$0.00			
57693	FAN HUB NEEDS REPLACING AND SI		Internal	DYNAPAC	20/04/2018	Flexihire	Repair	B Mackenzie	3205	
Type	Parts/Mechanics	Date	Description		Qty	Discount	Retail Reason	Warranty Expiry	SA Code	PO/TS No
PART	376622	2/05/2018	HOLDER FOR 376551		4.00	0	\$0.00 RE		101403SR	101419
Part	376819	2/05/2018	SCRAPER		2.00	0	\$0.00 RE		101403SR	101421
Part	376829	2/05/2018			2.00	0	\$0.00 RE		101403SR	101420
Part	382393	2/05/2018	FAN HUB		1.00	0	\$0.00 RE		101403SR	101416
Part	792081	2/05/2018			3.00	0	\$0.00 RE		101403SR	101417
Part	935774	2/05/2018	SWIVEL CABLE SEAT		1.00	0	\$0.00 RE		101403SR	101418
Part	FF5612	2/05/2018	Fuel Filter		1.00	0	\$0.00 RE		101403SR	101415
Part	FS19732	2/05/2018	FUEL SEPARATOR		1.00	0	\$0.00 RE		101403SR	101414
Part	LF16015	2/05/2018	OIL FILTER		1.00	0	\$0.00 RE		101403SR	101413
					Job Total:		\$0.00			
Note : 2 x scrapers required										
1 x service required										
1 x seat swivel cable required										
161972	PRE HIRE INSPECTION		Inspection	COM ROLL	29/01/2018		Inspection	B Mackenzie	2998	
Type	Parts/Mechanics	Date	Description		Qty	Discount	Retail Reason	Warranty Expiry	SA Code	PO/TS No
					1.00		\$0.00			
					Job Total:		\$0.00			
161223	PRE HIRE INSPECTION		Inspection	COM ROLL	23/01/2018		Inspection	B Mackenzie	2995	
Type	Parts/Mechanics	Date	Description		Qty	Discount	Retail Reason	Warranty Expiry	SA Code	PO/TS No
					1.00		\$0.00			
					Job Total:		\$0.00			

Job Code	Description		Job Type	Job Category	Service Date	Cust. Code	Call Reason	Mechanic	Hour Meter	Inv. No
55617	2 x Rear Scrapers required plus 2 x hc		Internal	DYNAPAC	3/01/2018	Flexihire	Repair	B Mackenzie	2990	
Type	Parts/Mechanics	Date	Description	Qty	Discount	Retail	Reason	Warranty Expiry	SA Code	PO/TS No
PART	LABOUR	14/03/2018	LABOUR	1.00	0	\$0.00	RE		101403SR	99950
Job Total:						\$0.00				
157659	PRE HIRE INSPECTION		Inspection	COM ROLL	21/12/2017		Inspection	B Mackenzie	2990	
Type	Parts/Mechanics	Date	Description	Qty	Discount	Retail	Reason	Warranty Expiry	SA Code	PO/TS No
				1.00		\$0.00				
Job Total:						\$0.00				
54293	FIT NEW A/C MOTOR NEW BONNET S		Internal	DYNAPAC	12/10/2017	002018	Repair	B Mackenzie	2985	
Type	Parts/Mechanics	Date	Description	Qty	Discount	Retail	Reason	Warranty Expiry	SA Code	PO/TS No
Part	382384	12/10/2017	GAS STRUT ENGINE BONNET	1.00	0	\$0.00	RE		101403SR	95696
Part	ACX3438	12/10/2017	EMERGENCY STOP SWITCH	1.00	0	\$0.00	RE		101403SR	95695
PART	LABOUR	12/10/2017	LABOUR	1.00	0	\$0.00	RE		101403SR	95697
Job Total:						\$0.00				
141135	PRE HIRE INSPECTION		Inspection	COM ROLL	6/10/2017		Inspection	B Mackenzie	2985	
Type	Parts/Mechanics	Date	Description	Qty	Discount	Retail	Reason	Warranty Expiry	SA Code	PO/TS No
				1.00		\$0.00				
Job Total:						\$0.00				
53321	WHOLE AIRCON ASSEMBLY NEEDS 1		Internal	DYNAPAC	17/08/2017	Flexihire	Repair	B Mackenzie	2985	
Type	Parts/Mechanics	Date	Description	Qty	Discount	Retail	Reason	Warranty Expiry	SA Code	PO/TS No
PART	LABOUR	10/10/2017	LABOUR	1.00	0	\$0.00	RE		101403SR	95583
Job Total:						\$0.00				
53149	250hr service		Internal	DYNAPAC	8/08/2017	52087	Scheduled Maintenance	B Mackenzie	2948	
Type	Parts/Mechanics	Date	Description	Qty	Discount	Retail	Reason	Warranty Expiry	SA Code	PO/TS No
						\$0.00				
Job Total:						\$0.00				

Job Code	Description		Job Type	Job Category	Service Date	Cust. Code	Call Reason	Mechanic	Hour Meter	Inv. No
139174	PRE HIRE INSPECTION		Inspection	COM ROLL	3/08/2017		Inspection	B Mackenzie	2948	
Type	Parts/Mechanics	Date	Description		Qty	Discount	Retail Reason	Warranty Expiry	SA Code	PO/TS No
					1.00		\$0.00			
					Job Total:		\$0.00			
136244	PRE HIRE INSPECTION		Inspection	COM ROLL	28/07/2017		Inspection	B Mackenzie	2944	
Type	Parts/Mechanics	Date	Description		Qty	Discount	Retail Reason	Warranty Expiry	SA Code	PO/TS No
					1.00		\$0.00			
					Job Total:		\$0.00			
132439	PRE HIRE INSPECTION		Inspection	COM ROLL	12/06/2017		Inspection	S Burdon	2887	
Type	Parts/Mechanics	Date	Description		Qty	Discount	Retail Reason	Warranty Expiry	SA Code	PO/TS No
					1.00		\$0.00			
					Job Total:		\$0.00			
125542	PRE HIRE INSPECTION		Inspection	COM ROLL	3/05/2017		Inspection	C STOCK	2887	
Type	Parts/Mechanics	Date	Description		Qty	Discount	Retail Reason	Warranty Expiry	SA Code	PO/TS No
					1.00		\$0.00			
					Job Total:		\$0.00			
51585	AIR-CON NOT GETTING COLD, CLUTCH		Internal	DYNAPAC	2/05/2017	Flexihire	Repair	C STOCK	2887	
Type	Parts/Mechanics	Date	Description		Qty	Discount	Retail Reason	Warranty Expiry	SA Code	PO/TS No
							\$0.00			
							Job Total:		\$0.00	
Note : Brosnan Auto Electrics to depot,test a/c circuit. Pressure tested and could not fault, vac down system and regased. o/n 220164 cost \$394.35										
121068	PRE HIRE INSPECTION		Inspection	COM ROLL	3/04/2017		Inspection	S Burdon	2847	
Type	Parts/Mechanics	Date	Description		Qty	Discount	Retail Reason	Warranty Expiry	SA Code	PO/TS No
					1.00		\$0.00			
					Job Total:		\$0.00			
118663	PRE HIRE INSPECTION		Inspection	COM ROLL	21/02/2017		Inspection	C ROBERTS	2783	
Type	Parts/Mechanics	Date	Description		Qty	Discount	Retail Reason	Warranty Expiry	SA Code	PO/TS No

Job Code	Description	Job Type	Job Category	Service Date	Cust. Code	Call Reason	Mechanic	Hour Meter	Inv. No
				1.00		\$0.00			
				Job Total:		\$0.00			
117646	PRE HIRE INSPECTION	Inspection	COM ROLL	13/02/2017		Inspection	S Burdon	2688	
Type	Parts/Mechanics	Date	Description	Qty	Discount	Retail Reason	Warranty Expiry	SA Code	PO/TS No
			ITEM SWAP - - -	1.00		\$0.00			
				Job Total:		\$0.00			
49391	replace door strut, uhf and stereo mis	Internal	DYNAPAC	9/02/2017	74352	Repair	S STEHBENS	2688	
Type	Parts/Mechanics	Date	Description	Qty	Discount	Retail Reason	Warranty Expiry	SA Code	PO/TS No
Part	027627	10/02/2017	GAS STRUT	1.00	0	\$0.00 RE		101418SR	89379
				Job Total:		\$0.00			
Note : replaced uhf, stereo and door strut found key to lock door and bonnet									
113298	PRE HIRE INSPECTION	Inspection	COM ROLL	25/01/2017		Inspection	S Burdon	2688	
Type	Parts/Mechanics	Date	Description	Qty	Discount	Retail Reason	Warranty Expiry	SA Code	PO/TS No
				1.00		\$0.00			
				Job Total:		\$0.00			
111648	PRE HIRE INSPECTION	Inspection	COM ROLL	16/12/2016		Inspection	C ROBERTS	2688	
Type	Parts/Mechanics	Date	Description	Qty	Discount	Retail Reason	Warranty Expiry	SA Code	PO/TS No
				1.00		\$0.00			
				Job Total:		\$0.00			
42650	PRE HIRE INSPECTION	Inspection	COM ROLL	29/11/2016		Inspection	C ROBERTS	2688	
Type	Parts/Mechanics	Date	Description	Qty	Discount	Retail Reason	Warranty Expiry	SA Code	PO/TS No
				1.00		\$0.00			
				Job Total:		\$0.00			
48569	1000hr service check over. Replace vi	Internal	DYNAPAC	28/11/2016	Flexihire	USE CODE: SM (Schedule Mair	A HANSEN	2688	
Type	Parts/Mechanics	Date	Description	Qty	Discount	Retail Reason	Warranty Expiry	SA Code	PO/TS No
Part	125104	29/11/2016	TYPE N120 MF CENTURY HEAVY COMMERCIAL BATTERY	1.00	0	\$0.00 250HR		101418SR	214281

Job Code	Description	Job Type	Job Category	Service Date	Cust. Code	Call Reason	Mechanic	Hour Meter	Inv. No
Part	357138	29/11/2016	BREATHER HYDRAULIC TANK	1.00	0	\$0.00 250HR		101418SR	88084
PART	376622	29/11/2016	HOLDER FOR 376551 SCRAPER	2.00	0	\$0.00 250HR		101418SR	88085
Part	813316	16/12/2016	BEARING STEER CYLINDER	1.00	0	\$0.00 250HR		101418SR	88498
Part	908502	20/12/2016	FILTER CABIN	1.00	0	\$0.00 250HR		101418SR	214334
Part	AF25491	20/12/2016	FILTER AIR INNER	1.00	0	\$0.00 250HR		101418SR	88524
Part	AF25492	20/12/2016	FILTER AIR OUTER	1.00	0	\$0.00 250HR		101418SR	88525
Part	FF42000	20/12/2016	FILTER FUEL	1.00	0	\$0.00 250HR		101418SR	88527
PART	FF5079	20/12/2016	FILTER FUEL 3/8 inline	1.00	0	\$0.00 250HR		101418SR	88528
Part	FS19732	20/12/2016	FUEL SEPARATOR	1.00	0	\$0.00 250HR		101418SR	88529
PART	HF6553	29/11/2016	FILTER HYD	2.00	0	\$0.00 250HR		101418SR	88086
Part	LF16015	20/12/2016	OIL FILTER	1.00	0	\$0.00 250HR		101418SR	88526
Job Total:						\$0.00			

Note : COMPLETE 1000HR SERVICE REPLACE OILS IN DIFF, HUB, DRUM OIL, HYD OIL, ALL FILTERS WAS REPLACED,CHECK OVER AND OPERATE, LHS STEERING BEARING ON CENTRE PIVOT WAS BUILT BACK TO ORIGINAL BY ADVANTAGE WELDING 12/16.

44587	Replace Vibration Motor Hydraulic Ho	Internal	DYNAPAC	8/02/2016	Flexihire	Repair	GLADWR	2677	
Type	Parts/Mechanics	Date	Description	Qty	Discount	Retail Reason	Warranty Expiry	SA Code	PO/TS No
						\$0.00			
Job Total:						\$0.00			

41519	CA302 Air intake hose chafing - warra	Internal	DYNAPAC	20/07/2015	Flexihire	Repair	A CHAPMAN	2677	
Type	Parts/Mechanics	Date	Description	Qty	Discount	Retail Reason	Warranty Expiry	SA Code	PO/TS No
Part	393045	11/01/2016	HOSE AIR CHARGE	1.00	0	\$0.00 RE		101402SR	81252
Job Total:						\$0.00			

Note : Service kit # 4812119159 has been supplied by Dynapac to prevent engine air intake hoses from chaffing. Refer Service Bulletin # 11

29766	MACHINE SERVICED ON SITE BY BEC	Internal	DYNAPAC	18/09/2013	002127	USE CODE: RE - REPAIR	OUTSIDE REPAIF	1724	
Type	Parts/Mechanics	Date	Description	Qty	Discount	Retail Reason	Warranty Expiry	SA Code	PO/TS No
PART	LABOUR	18/09/2013	LABOUR	1.00	0	\$0.00 PR		101402SR	55906
Job Total:						\$0.00			

Job Code	Description	Job Type	Job Category	Service Date	Cust. Code	Call Reason	Mechanic	Hour Meter	Inv. No
Note : REPLACED									
ENGINE OIL REPLACED OIL FILTER LF 16015 REPLACED FUEL FILTER FF5612 AND FS19732 REPLACED AIR FILTER 4700394686									
CHECKED HYDRAULIC OIL CHECKED HYDRAULIC FILTER CHECKED REAR DIFF CHECKED FINAL DRIVES CHECKED BATTERIES CHECKED RADIATOR CHECKED BELTS CHECKED TYRES, LIGHTS, REVERSE ALARM AND GREASED MACHINE									
29473	SERVICED ON SITE BY BECHTEL - RE	Internal	DYNAPAC	14/07/2013	002127	USE CODE: RE - REPAIR	OUTSIDE REPAIR	1540	
Type	Parts/Mechanics	Date	Description	Qty	Discount	Retail Reason	Warranty Expiry	SA Code	PO/TS No
PART	LABOUR	14/07/2013	LABOUR	1.00	0	\$0.00 PR		101402SR	55496
Job Total:						\$0.00			
Note : serviced by bechtel									
changed engine oil changed oil filter x 1 changed fuel filters x 2 changed air filters x 2									
checked hydraulic oil checked hydraulic filter checked rear diff checked batteries, radiator, belts, tyre pressure, lights and reverse alarm									
27302	500 HR SERVICE	Internal	DYNAPAC	28/06/2013	002127	USE CODE: RE - REPAIR	GLADWR	1330	
Type	Parts/Mechanics	Date	Description	Qty	Discount	Retail Reason	Warranty Expiry	SA Code	PO/TS No
Part	500HR	28/06/2013	500 HOUR SERVICE AS PER FLEXIHIRE SERVICE SCHEDULE	1.00	0	\$0.00 PR		101402SR	51244
Part	AF25492	28/06/2013	FILTER AIR OUTER	1.00	0	\$0.00 PR		101402SR	51239
Part	FF42000	28/06/2013	FILTER FUEL	1.00	0	\$0.00 PR		101402SR	51241
PART	FF5079	28/06/2013	FILTER FUEL 3/8 inline	1.00	0	\$0.00 PR		101402SR	51242
PART	HF6553	28/06/2013	FILTER HYD	1.00	0	\$0.00 PR		101402SR	51240
PART	LF3345	28/06/2013	FILTER OIL USE LF3805	1.00	0	\$0.00 PR		101402SR	51243
Job Total:						\$0.00			
Note : SERVICE CARRIED OUT BY BECHTEL ON CURTIS ISLAND									
26273	REPAIR	Internal	DYNAPAC	17/05/2013	002127	USE CODE: RE - REPAIR	GLA	1330	
Type	Parts/Mechanics	Date	Description	Qty	Discount	Retail Reason	Warranty Expiry	SA Code	PO/TS No

Job Code	Description	Job Type	Job Category	Service Date	Cust. Code	Call Reason	Mechanic	Hour Meter	Inv. No
Part	635061	17/05/2013	CLIP STEER CYLINDER PIN	2.00	0	\$0.00 PR		101402SR	48892
Job Total:						\$0.00			

25834 250HR SERVICE - REFER NOTES Internal DYNAPAC 22/03/2013 002127 USE CODE: RE - REPAIR GLA 1338

Type	Parts/Mechanics	Date	Description	Qty	Discount	Retail Reason	Warranty Expiry	SA Code	PO/TS No
Part	250HR	22/03/2013	250 HOUR SERVICE AS PER FLEXIHIRE SERVICE SCHEDULE	1.00	0	\$0.00 PR		101402SR	47954
Part	392002	22/03/2013	HYDRAULIC CYLINDER STEERING	1.00	0	\$0.00 PR		101402SR	47951
Part	394686	22/03/2013	AIR FILTER OUTER Use Genuine only	1.00	0	\$0.00 PR		101402SR	47947
Part	635061	22/03/2013	CLIP STEER CYLINDER PIN	2.00	0	\$0.00 PR		101402SR	47953
Part	813316	22/03/2013	BEARING STEER CYLINDER	2.00	0	\$0.00 PR		101402SR	47952
Part	FF5612	22/03/2013	Fuel Filter Suit Ca302 Cummins	1.00	0	\$0.00 PR		101402SR	47948
Part	FS19732	22/03/2013	Fuel separator Suit Ca302 cumm	1.00	0	\$0.00 PR		101402SR	47950
Part	LF16015	22/03/2013	OIL FILTER	1.00	0	\$0.00 PR		101402SR	47949
Job Total:						\$0.00			

Note : REPLACED ENGINE OIL AND FILTER
 REPLACED FUEL FILTER
 REPLACED OUTER AIR FILTER
 CHECKED COOLANT AND HYDRAULIC OIL
 CHECKED REAR HUBB AND AXLE OIL
 CHANGED OIL IN DRUM GEARBOX
 FITTED NEW ARIAL
 CHECKED LIGHTS ETC
 FITTED NEW L/H STEERING RAM AND BEARINGS
 CHECKED OIL IN BOTH DRUM CARTRIDGE GEARBOXES
 CLEANED FILTER
 CARRIED OUT PRE HIRE INSPECTION AS PER FLEXIHIRE SCHEDULE

COMPLETED BY PATRICK MANNION

24084 REPLACED OUTER AIR FILTER AND C Internal DYNAPAC 7/12/2012 Flexihire USE CODE: RE - REPAIR GLA 1256

Type	Parts/Mechanics	Date	Description	Qty	Discount	Retail Reason	Warranty Expiry	SA Code	PO/TS No
Part	394686	7/12/2012	AIR FILTER OUTER Use Genuine only	1.00	0	\$0.00 PR		101402SR	44370
Job Total:						\$0.00			

20967 1000hr service plus unit keeps shuttin Internal DYNAPAC 7/09/2012 Flexihire Scheduled Maintenance BIL 1109

Type	Parts/Mechanics	Date	Description	Qty	Discount	Retail Reason	Warranty Expiry	SA Code	PO/TS No
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Job Code	Description		Job Type	Job Category	Service Date	Cust. Code	Call Reason		Mechanic	Hour Meter	Inv. No
CONS	801276-20	7/09/2012	CASTROL EPX 80W/90		1.00	0	\$0.00	PR		101409SR	38645
Part	357138	7/09/2012	GEAR OIL 20Lt		1.00	0	\$0.00	PR		101409SR	38644
Part	394686	7/09/2012	BREATHER HYDRAULIC		1.00	0	\$0.00	PR		101409SR	38638
Part	394687	7/09/2012	TANK		1.00	0	\$0.00	PR		101409SR	38639
Part	908502	7/09/2012	AIR FILTER OUTER Use		1.00	0	\$0.00	PR		101409SR	38640
Part	FF5612	7/09/2012	Genuine only		1.00	0	\$0.00	PR		101409SR	38643
Part	FS19732	7/09/2012	AIR FILTER INNER Use		1.00	0	\$0.00	PR		101409SR	38641
PART	HF6553	7/09/2012	Genuine Only		1.00	0	\$0.00	PR		101409SR	38642
Part	LF16015	7/09/2012	FILTER CAB CA302		1.00	0	\$0.00	PR		101409SR	38637
			Fuel Filter Suit Ca302		1.00	0	\$0.00	PR			
			Cummins		1.00	0	\$0.00	PR			
			Fuel separator Suit Ca302		1.00	0	\$0.00	PR			
			cumm		1.00	0	\$0.00	PR			
			FILTER HYD		1.00	0	\$0.00	PR			
			OIL FILTER		1.00	0	\$0.00	PR			
Job Total:							\$0.00				

Note : The report on the CA302 sn:A006820, 1109hrs all part supplied by Flexihire.

1000hr Service, charged the cartridge oils, drum gear oil, engine oil, hydraulic oil & the final drive oils.

Replace the engine oil filter, fuel filters, hydraulic filters, air filters inner & outer, the cab filter & replace the hydraulic cap breather.

Adjust the tappets, greased & tighten the arm rest.

General check over, includes battery, all lights, a/c, windscreen wipers & washers, reverse alarm, tyre condition & pressure, drum rubbers, fan belt, fan hub & hoses (etc.).

Check glycol level in the coolant 46%, did not change as it was in spec.

Replace LH rear blinker bulb & LH headlight fuse.

Note: Found the drum gear oil & the both reduction drive oil was quite dark in colour. The customer was complaining that the engine was shutting down.

Check the connection at the engine computer & the E stop connection, couldn't find the problem with the engine shutting down.

Regards

Jason

CHARGE AIR HOSE AND AIR INTAKE HOSE WERE ALSO CHANGED BY JASON WITT.

18730	250HR SERVICE		Internal	DYNAPAC	17/05/2012	005122	Scheduled Maintenance	K BERRY		658
Type	Parts/Mechanics	Date	Description	Qty	Discount	Retail	Reason	Warranty Expiry	SA Code	PO/TS No

Job Code	Description	Job Type	Job Category	Service Date	Cust. Code	Call Reason	Mechanic	Hour Meter	Inv. No
Part	394686	17/05/2012	AIR FILTER OUTER Use Genuine only	1.00	0	\$0.00 PR		101409SR	33580
Part	LF16015	17/05/2012	OIL FILTER	1.00	0	\$0.00 PR		101409SR	33579
Job Total:						\$0.00			

Note : 10/05/12 250HR SERVICE. REMOVED BOTH FUEL FILTERS, DRAINED OIL AND REMOVED ENGINE OIL FILTER AND ENGINE AIR OURTER. REPLACED AFFECTED FILTERS AND ADJUSTED OIL/FLUID LEVELS. RAN AND TESTED FOR LEAKS. SYSTEM TESTED OK JOB COMPLETE. FILTERS FS19732 AND FF5612 WERE IN MY STOCK BUT NOT ON THE SYSTEM.

17465 **parts for repair** **Internal** **DYNAPAC** **8/03/2012** **005122** **USE CODE: RE - REPAIR** **BIL** **658**

Type	Parts/Mechanics	Date	Description	Qty	Discount	Retail Reason	Warranty Expiry	SA Code	PO/TS No
PART	373460	8/03/2012	CAP FUEL NON LOCKING	1.00	0	\$0.00 PR		101409SR	30712
Job Total:						\$0.00			

Note : 08/03/2012 replaced fuel cap.

17185 **SERVICE** **Internal** **DYNAPAC** **15/02/2012** **005122** **USE CODE: RE - REPAIR** **BIL** **658**

Type	Parts/Mechanics	Date	Description	Qty	Discount	Retail Reason	Warranty Expiry	SA Code	PO/TS No
						\$0.00			
Job Total:						\$0.00			

17183 **500hr service** **Internal** **DYNAPAC** **15/02/2012** **005122** **USE CODE: RE - REPAIR** **BIL** **658**

Type	Parts/Mechanics	Date	Description	Qty	Discount	Retail Reason	Warranty Expiry	SA Code	PO/TS No
Part	394686	15/02/2012	AIR FILTER OUTER Use Genuine only	1.00	0	\$0.00 PR		101409SR	30214
Part	394687	15/02/2012	AIR FILTER INNER Use Genuine Only	1.00	0	\$0.00 PR		101409SR	30213
Part	FF5612	15/02/2012	Fuel Filter Suit Ca302 Cummins	1.00	0	\$0.00 PR		101409SR	30212
Part	FS19732	15/02/2012	Fuel separator Suit Ca302 cumm	1.00	0	\$0.00 PR		101409SR	30211
Part	LF16015	15/02/2012	OIL FILTER	1.00	0	\$0.00 PR		101409SR	30210
Job Total:						\$0.00			

Note : 15/02/2012 PREFORMED 500HR SERVICE. REMOVED SUMP OIL, ENGINE FILTER AND FUEL FILTER. INSTALLED NEW ENGINE / FUEL FILTERS. REMOVED INNER AND OUTTER AIR ELEMENTS, REPLACED WITH NEW. REFILLED ENGINE OIL LEVELS. TESTED FOR LEAKS, ADJUSTED OIL FLUID LEVELS. GREASED UNIT. LUBED STEERING CHAIN. CHECKED ALL LIGHTS AND HYDRAULIC HOSES. SYSTEMS TEST OK. JOB COMPLETE.

15161 **REPLACED LIGHT - TURN SIGNAL** **Internal** **DYNAPAC** **7/11/2011** **005122** **USE CODE: RE - REPAIR** **GLA** **0**

Type	Parts/Mechanics	Date	Description	Qty	Discount	Retail Reason	Warranty Expiry	SA Code	PO/TS No
PART	904315	7/11/2011	LIGHT-TURN SIGNAL CA302	1.00	0	\$0.00 PR		101402SR	26303
Job Total:						\$0.00			

Job Code	Description	Job Type	Job Category	Service Date	Cust. Code	Call Reason	Mechanic	Hour Meter	Inv. No
15576	250HR SERVICE	Internal	DYNAPAC	26/10/2011	005122	USE CODE: RE - REPAIR	A HANSEN	300	
Type	Parts/Mechanics	Date	Description	Qty	Discount	Retail Reason	Warranty Expiry	SA Code	PO/TS No
Part	394686	18/11/2011	AIR FILTER OUTER Use Genuine only	1.00	0	\$0.00 PR		101409SR	27095
Part	394687	18/11/2011	AIR FILTER INNER Use Genuine Only	1.00	0	\$0.00 PR		101409SR	27094
Part	FF5612	18/11/2011	Fuel Filter Suit Ca302 Cummins	1.00	0	\$0.00 PR		101409SR	27096
Part	FS19732	18/11/2011	Fuel separator Suit Ca302 cumm	1.00	0	\$0.00 PR		101409SR	27097
PART	HF6553	18/11/2011	FILTER HYD	1.00	0	\$0.00 PR		101409SR	27098
PART	HF6553	18/11/2011	FILTER HYD	1.00	0	\$0.00 PR		101409SR	27099
Part	LF16015	18/11/2011	OIL FILTER	1.00	0	\$0.00 PR		101409SR	27102
Job Total:						\$0.00			
15572	250hr service	Internal	DYNAPAC	22/10/2011	005122	USE CODE: RE - REPAIR	A HANSEN	300	
Type	Parts/Mechanics	Date	Description	Qty	Discount	Retail Reason	Warranty Expiry	SA Code	PO/TS No
Part	250HR	18/11/2011	250 HOUR SERVICE AS PER FLEXIHIRE SERVICE SCHEDULE	1.00	0	\$0.00 PR		101416SR	27091
Job Total:						\$0.00			
15570	50 hr service	Internal	DYNAPAC	22/09/2011	005122	USE CODE: RE - REPAIR	A HANSEN	50	
Type	Parts/Mechanics	Date	Description	Qty	Discount	Retail Reason	Warranty Expiry	SA Code	PO/TS No
Part	50HR	18/11/2011	50 HOUR SERVICE AS PER FLEXIHIRE SCHEDULE	1.00	0	\$0.00 PR		101416SR	27089
Job Total:						\$0.00			
Note : 50 hr service was completed filters was supplid.									
13178	DRIVE COUPLING	Internal	DYNAPAC	4/08/2011	005122	USE CODE: RE - REPAIR	ROC	0	
Type	Parts/Mechanics	Date	Description	Qty	Discount	Retail Reason	Warranty Expiry	SA Code	PO/TS No
Part	370229	4/08/2011	DRIVE COUPLING ENGINE	1.00	0	\$0.00 PR		101401SR	22229
Job Total:						\$0.00			
13174	REPLACE HEADLIGHT COVERS AND	Internal	DYNAPAC	4/08/2011	005122	USE CODE: RE - REPAIR	ROC	0	
Type	Parts/Mechanics	Date	Description	Qty	Discount	Retail Reason	Warranty Expiry	SA Code	PO/TS No
Part	374120	4/08/2011	COVER PROTECTOR HEAD LIGHT CA302	2.00	0	\$0.00 PR		101401SR	22212
Part	387124	4/08/2011	BOTTOM RADIATOR HOSE	1.00	0	\$0.00 PR		101401SR	22213
Part	4812113939	4/08/2011	LOCK ASSEMBLY BONNET	1.00	0	\$0.00 PR		101401SR	22214

Job Code	Description		Job Type	Job Category	Service Date	Cust. Code	Call Reason	Mechanic	Hour Meter	Inv. No
PART	904315	4/08/2011	LIGHT-TURN SIGNAL		1.00	0	\$0.00 PR		101401SR	22215
Part	904316	4/08/2011	CA302							
Part	904316	4/08/2011	LAMP DIRECTION FRONT		1.00	0	\$0.00 PR		101401SR	22216
					Job Total:		\$0.00			
					Grand Total:		\$0.00			

 ABN: 66 631 834 903	ITP No. 0000-ITP-EMB-01	INSPECTION AND TESTING PLAN
	Project: QUT Open Air Sports Court	Embankment

References:	Project specification and drawings	Prepared by:	V Hemsley	Date Prepared:	30/11/2021
Lot Location:	60A Gardens Point Rd, Brisbane City	Approved by:	N Carsburg	Date Approved:	30/11/2021

Item No	Check Item	Description	Check	Witness Point	Hold Point	Conforming
1.	Check Item	Method of installation. Embankment is installed using the Compacted Layer Method: - No fill particles/stones are larger than 2/3 of the layer thickness; - Maximum layer thickness is 200mm using a 12T roller - Moisture content of the material is at optimum to ensure compaction is achieved				
2.	Check Item	Environmental. Erosion and sediment control devices are installed around the works				
3.	Test item	Material. Fill materials comply with the requirements detailed on the drawings and specifications.				
4.	Check item	Compaction method. Compaction methods are selected and suitable for the type of material that is being compacted. The surface of the embankment is to be free draining and not pond any water during construction.				
5.	Test item	Layer thickness. Fill material is placed in uniform layers and complies with the below: - General fill material in road or building embankment: 150-300mm; and - Subgrade material in road or building embankment: 100-200mm.				
6.	Check Item	Testing and conformance. Compaction testing is to be done on the placed fill at different layers to confirm the specification is being met (95% compaction): Minimum testing of 1 per lot.				

Lot Verification & Conformance - All conformance data including survey, materials and construction completed and attached. Any NCR's rectified and closed.

Contractors Representative	Date	Clients Representative	Date
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TYPE	Rollers, Padfoot Self Propelled
MAKE	Dynapac
MODEL	CA302PD
ASSET NUMBER	11002024
REGISTRATION	C01423

Report Number	FL 20171103-1808
Date	03-Nov-2017
Created By	LUKE GRAHAM
Assessor	LUKE GRAHAM
Assist. Assessor(s)	
Completed By	LUKE GRAHAM
Owner	Flexihire Pty Ltd
Assessment Purpose	Hire
State	QLD

TABLE OF CONTENTS

SECTION 1	IMPORTANT INFORMATION Contains information outlining the scope and any limitations applicable to this Risk Management Report
SECTION 2	MACHINE DETAILS Contains standard machine specifications and details of any extras fitted
SECTION 3	RISK ANALYSIS, RISK EVALUATION & RISK TREATMENT Contains details of the technique used to calculate risk ratings, time frame and risk treatments. Please refer to this information when reviewing and interpreting the information in section 4 & 5
SECTION 4	RISK TREATMENTS REQUIRED Contains detailed information regarding the risk treatments to be implemented including hazard, risk rating, time frame, relevant standards & legislative references
SECTION 5	RISK TREATMENTS IN PLACE Contains detailed information regarding the risk treatments in place including hazard, risk rating, relevant standards & legislative references
SECTION 6	IMAGES AND NOTES Contains images & any relevant information entered by the assessor

SECTION 1 IMPORTANT INFORMATION

This report generated by Plant Assessor™ © Online Safety Systems on Thursday, 26 Jul 2018 9:37 AM

This report pertains to this item of plant as it appeared on the day of inspection.

It is the responsibility of the hirer to conform with the instructions and information contained within this report. Any change in condition of this item of plant should be reported to the hire company immediately.

Any information relating to the standard features have been supplied via the manufacturer and should be used as a guide only until verified.

For further information regarding this report contact Online Safety Systems on 1300 72 88 52

SECTION 2 MACHINE DETAILS

MACHINE DETAILS	- NOISE TEST RESULTS	1. Manufacturers specified noise level dBA	108
		2. Ambient noise level dBA	
		3. Noise level - Operator position (high idle) dBA	75
		4. Noise level - Operator position (low idle) dBA	
		5. Noise level LHS dBA @ m (high idle)	
		6. Noise level Front dBA @ m (high idle)	
		7. Noise level RHS dBA @ m (high idle)	
		8. Noise level Rear dBA @ m (high idle)	
	BODY TYPE	Articulation, either side (deg)	38
	BRAKES	Service Braking System	HS
	CAPACITIES	Fuel Tank Capacity (Litres)	250
DIMENSIONS/WEIGHTS		Height (mm)	2,977
		Length (mm)	5,550
		Operating weight (kg)	12,500
		Pad area (cm2)	146
		Pad height (mm)	102
		Static weight on drum (kg)	8,000
		Turning circle diameter (mm)	10,800
		Width (mm)	2,384
DRUMS		Drum width (mm)	2,130
		Number of pads	150
ENGINE		Engine Displacement (Ltr)	3.9
		Engine Hours	4183
		Engine Make & Model	Deutz BF4M2012C
		Engine Number	
		Net power, SAE rated (kW@rpm)	92@2200
		Number of Cylinders	4
PLANT CLASSIFICATIONS		Class	ERG class RR8: Operating wgt >8.8t <=12.5t
		Year	2003 - 2006
TRANSMISSION		Speed range (km/hr)	
		Transmission type	HS
TYRES		Tyre Size	600/60-30.5
WORK CAPABILITIES		Centrifugal force, high+low amplitude (kN)	300+146
		Gradeability (%)	57
		Nominal amplitude, high+low (mm)	1.6+0.8
		Vibratory frequency, max+min (Hz)	33+33
EXTRAS		Air Conditioning	
		ROPS - Cabin	
		Wheel Chocks	

SECTION 3 RISK ANALYSIS / RISK EVALUATION

RISK ANALYSIS		CONSEQUENCE				
LIKELIHOOD		1. INSIGNIFICANT Dealt with by in house first aid	2. MINOR Treated by medical professionals, hospital out patients	3. MODERATE Significant non permanent injury overnight hospital stay	4. MAJOR Extensive permanent injury eg. Loss of fingers, extended hospital stay	5. CATASTROPHIC Death, permanent disabling injury eg. Loss of hand, quadriplegia
	A. Almost certain to occur in most circumstances	MEDIUM 8	HIGH 16	HIGH 18	CRITICAL 23	CRITICAL 25
	B. Likely to occur frequently	MEDIUM 7	MEDIUM 10	HIGH 17	HIGH 20	CRITICAL 24
	C. Possibly and likely to occur at sometime	LOW 3	MEDIUM 9	MEDIUM 12	HIGH 19	HIGH 22
	D. Unlikely to occur but could happen	LOW 2	LOW 5	MEDIUM 11	MEDIUM 14	HIGH 21
	E. May occur but only in rare circumstances	LOW 1	LOW 4	LOW 6	MEDIUM 13	MEDIUM 15

RISK EVALUATION	CRITICAL	Act immediately to mitigate risk. Implement risk treatment(s) in accordance with the risk treatment table below.
	HIGH	Act immediately to mitigate risk. Implement risk treatment(s) in accordance with the risk treatment table below. If the appropriate risk treatments are not immediately accessible establish interim risk treatment strategies. Permanent risk treatments must be implemented within one week.
	MEDIUM	Take reasonable steps to mitigate and monitor the risk. Implement risk treatment(s) in accordance with the risk treatment table below. Permanent risk treatments must be implemented within one month.
	LOW	Take reasonable steps to mitigate and monitor the risk. Implement risk treatment(s) in accordance with the risk treatment table below. Permanent risk treatments must be implemented within three months.

RISK TREATMENT	Selecting the most appropriate risk treatment option involves balancing the costs and efforts of implementation against the benefits derived, with regard to legal, regulatory and other requirements. (source AS/NZS ISO 31000:2009)	
	Eliminate	Eliminate the risk source.
	Substitute	Provide an alternative that is capable of performing the same task which is safer.
	Engineering	Provide or construct a physical barrier or guard.
	Administration	Develop policies, procedures, practices and guidelines in consultation with employees to mitigate the risk. Provide training, instruction and supervision about the risk source.
	Personal protective	Provide personal protective equipment to protect the individual from the risk source.

SECTION 4 RISK TREATMENTS REQUIRED

This section of the report pertains to hazards created by use of this item of plant which currently do not have risk treatments in place. The risk treatments recommended in this section have been developed based on relevant Australian Standards, health & safety legislation, the hierarchy of risk treatment in accordance with the guidelines set forth in AS/NZS ISO 31000 – Risk Management and various other sources. The recommended risk treatment measures must be developed, implemented and validated as effective prior to the operation, maintenance or testing of this item of plant. Treatments applied must be dated and initialled adjacent the recommendations. All operators must read and understand the entire contents of this section prior to operating this item of plant.

DESIGN COMPLIANCE	HAZARD(S)	Prelim. Risk Rating	Residual Risk Rating	Time Frame	Due Date	Date Rectified	Initial
	 CRUSHING, COLLISION	HIGH 22	MEDIUM 15	1 Week	10-Nov-17		
Risk Treatment Required: Reverse Movement Alarm Ensure this item of plant fitted with a reverse movement sensor alarm which is automatically activated when reverse gear is selected prior to operating this item of plant. Once fitted it must be fully functional and serviceable at all times whilst this item of plant is in operation. Legislation: State Health & Safety Legislation & Regulation References: ISO7731, ISO9533 Assessor Comments: site specific Revised Date/Control Not Required Comments: site specific							
DELIVERY	 INCORRECT OPERATION, OPERATIONAL MALFUNCTION	MEDIUM 14	MEDIUM 13	1 Month	3-Dec-17		
	Risk Treatment Required: Restricted Access Switches This item of plant must be fitted with a device to restrict operator. A code/key must only be given to those that have appropriate experience or training. References: AS/NZS4024.1201 Assessor Comments: site specific Revised Date/Control Not Required Comments: site specific						

SECTION 5 RISK TREATMENTS IN PLACE

This section of the report pertains to risk treatments currently in place on this item of plant. This section must be read in conjunction with the safety section of the manufacturers handbook. All operators must read and understand the entire contents of this section prior to operating this item of plant. These treatments or equivalent must remain in place at all times whilst this item of plant is in operation.

DELIVERY	HAZARD(S)	Prelim. Risk Rating	Residual Risk Rating
	 CRUSHING	HIGH 22	MEDIUM 15
Risk Treatments in Place: SWMS Loading/Unloading Ensure that all operators follow approved SWMS/SOP when loading and unloading this machine to and from a flat top truck or trailer, low loader or tilt tray. References: Work Health & Safety Act & Regulations-			
DELIVERY	 CRUSHING	HIGH 22	MEDIUM 15
	Risk Treatments in Place: SWMS Load Restraint Ensure that all operators follow the approved SWMS/SOP when restraining this machine for transport. References: Work Health & Safety Act & Regulations-		

HAZARD(S)		Prelim. Risk Rating	Residual Risk Rating
 INCORRECT OPERATION	CRITICAL 24	MEDIUM 15	
Risk Treatments in Place: Operator Competency Only persons who are qualified, trained and experienced and/or hold the relevant certification/license can operate this item of plant. If there is not a competent/licensed person available for operation of this item of plant then only persons who are supervised by a competent/licensed person can operate this item of plant.			
References: Work Health & Safety Act & Regulations-			
 INCORRECT OPERATION	HIGH 22	MEDIUM 15	
Risk Treatments in Place: Operation Handbook The manufacturer's operation handbook has been supplied for this item of plant.			
This handbook must be available at all times to all potential operators and supervisory staff. All potential operators must read and be familiar with this handbook prior to operating.			
A complete risk assessment/Job Safety Analysis must be undertaken covering all operating processes and environments associated with this item of plant. SWMS should be produced for specific tasks associated with use of this item of plant.			
References: Work Health & Safety Act & Regulations-			
 INCORRECT OPERATION	HIGH 22	MEDIUM 15	
Risk Treatments in Place: Pre-op Checklist Roller, Padfoot Self Propelled A pre-operational checklist is available for this Roller, Padfoot Self Propelledr. All operators must complete this checklist prior to operating this Roller, Padfoot Self Propelled.			
References: Work Health & Safety Act & Regulations-			
 INCORRECT OPERATION	HIGH 22	MEDIUM 15	
Risk Treatments in Place: SOP Roller, Padfoot Self Propelled Safe Operation Procedures are available for this Roller, Padfoot Self Propelled. The information in the Safe Operation Procedures must be followed at all times whilst operating this Roller, Padfoot Self Propelled.			
References: Work Health & Safety Act & Regulations-			
 INCORRECT OPERATION	HIGH 22	MEDIUM 15	
Risk Treatments in Place: Control Labels All controls including all levers, buttons, pedals, switches etc. are clearly labelled as to their purpose and method of operation. These labels must be maintained in a clean and serviceable condition at all times.			
References: AS/NZS4024.1905			
 CRUSHING	HIGH 22	MEDIUM 15	
Risk Treatments in Place: ROPS Label The warning label stating that the ROPS must not be damaged at any time (including cuts, drill holes and welds) must be present, clean and legible at all times.			
References: ISO3471			
 CRUSHING	HIGH 22	MEDIUM 15	
Risk Treatments in Place: ROPS seat belt label The advisory label stating that a "ROPS is fitted seatbelts must be worn" must be followed at all times whilst operating this item of plant. This label must be present, clean and legible at all times.			
References: AS2294, ISO3471			

HAZARD(S)		Prelim. Risk Rating	Residual Risk Rating
 POISONING, EXPLOSION, BURNS			HIGH 22
			MEDIUM 15
	Risk Treatments in Place: Tank ID Label The tank(s) on this item of plant have clear, legible label(s) identifying their contents, and if appropriate any necessary controls re: the contents. These must be present, clear and legible at all times. (this includes radiator, hydraulic and petrol/diesel tanks) References: Work Health & Safety Act & Regulations-		
 CRUSHING			HIGH 21
			MEDIUM 15
	Risk Treatments in Place: Articulated Joint Crush Label This item of plant has clear hazard warning labels re: crush zone, keep clear, that are attached to each side of the articulated joint. These must be present, clear and legible at all times whilst this item of plant is in operation. References: ISO20474- , AS/NZS4024.1201		
 ENTANGLEMENT, SHEARING, BURNS			HIGH 19
			MEDIUM 13
	Risk Treatments in Place: Engine Guard Label The engine fan and alternator belts, pulleys and gears are guarded. These guards have clear legible hazard warning labels re do not open or remove guards while engine is running. These labels must be present, legible and easily seen at all times whilst this item of plant is in operation. References: AS1319- , AS/NZS4024.1201		
 FIRE			MEDIUM 13
			LOW 4
	Risk Treatments in Place: Fire Extinguisher This item of plant is fitted with an approved and maintained fire extinguisher. Fire extinguisher(s) must be present and fully functional at all times. They must be readily accessible to the operator. Regular inspections must also be carried out in accordance with the manufacturer's requirements and AS 1851 – 1995 References: AS/NZS1841, AS1851		
 CRUSHING, COLLISION			MEDIUM 12
			LOW 6
	Risk Treatments in Place: Warning Device (horn) This item of plant is fitted with a fully functional audible warning device such as a horn. This must be easily accessed by the operator, and easily identifiable by nearby pedestrians. All operators should ensure the warning devices are functional at the start of each shift, by completing pre-start checklists. Warning devices should operate automatically where appropriate (eg reversing) References: ISO7731, ISO9533		
 COLLISION			MEDIUM 9
			LOW 5
	Risk Treatments in Place: Recovery Point Label This item of plant is fitted with a hazard warning label adjacent the recovery tow point which states "Danger – Read manufacturer's towing instructions before towing. Failure to do so could result in DEATH or SERIOUS INJURY." This label must be clear and legible at all times whilst this item of plant is in operation. References: ISO31000		

HAZARD(S)	Prelim. Risk Rating	Residual Risk Rating
 CRUSHING, COLLISION	CRITICAL 24	MEDIUM 15
Risk Treatments in Place: Park Brake The park brake fitted to this item of plant is fully functional at all times. The park brake must be regularly inspected and tested. These inspections and tests must be documented as part of your plant safety programme. References: AS2958		
 CRUSHING, ENTANGLEMENT, STRIKING, COLLISION	HIGH 22	MEDIUM 15
Risk Treatments in Place: Neutral Start This item of plant has neutral start control in place. It must be fully functional and serviceable at all times whilst this item of plant is in operation. References: AS4024.1603		
 CRUSHING	HIGH 22	MEDIUM 15
Risk Treatments in Place: Seat Belt This item of plant is fitted with an operator seat belt. This seat belt must be free from damage, and permanently and sturdily attached at all times whilst this item of plant is in operation. Operators must use this seat belt at all times during operation. References: ISO6683		
 CRUSHING	HIGH 22	MEDIUM 15
Risk Treatments in Place: Earthmoving ROPS A Roll Over Protective Structure (ROPS) to AS 2294, ISO 3471, ISO 12117.1 or 2 or SAE J1040 is fitted to this item of plant. A permanent label stating this standard must be attached to the structure at all times. It must also carry a warning label re: wearing of seat belts at all times whilst this item of plant is in operation, and accordingly seat belts must be worn at all times during operation. References: AS2294, ISO3471		
 STRIKING, BURNS	HIGH 22	MEDIUM 15
Risk Treatments in Place: Hydraulic Hoses This item of plant has hydraulic hoses. These hoses must be inspected each day or before each use for wear and tear. If there are visible signs of wear immediate action must be taken to control the risk arising from this wear. These inspections must be documented. Hydraulic fluid at high pressure can penetrate the skin, never use any part of your body to check for leaks. If oil penetrates the skin seek medical advice immediately. Always use a piece of cardboard or similar to check for suspected leaks. Hydraulic pressure can be stored and is a hazard. Before disconnection or connection of hydraulic hoses complete the following steps - 1. Stop engine 2. Keep all bystanders clear of the work area 3. Refer to operators manual as to methods to release pressure 4. Wait 5 minutes References: AS2671, AS4024		
 POOR VISIBILITY, COLLISION	HIGH 22	MEDIUM 15
Risk Treatments in Place: Machine Lights This item of plant is fitted with self contained lighting. All of these lights must be fully functional and serviceable whilst this item of plant is in operation in areas of reduced light. If any of these lights stop working the operation must cease immediately and the faulty light be repaired before operation can continue in the areas of reduced light. References: ISO20474-		

HAZARD(S)		Prelim. Risk Rating	Residual Risk Rating
	ENTANGLEMENT	HIGH 22	MEDIUM 15
Risk Treatments in Place: Engine Guards The engine fan and alternator belts, pulleys and gears are guarded. These guards must be present and fully functional and serviceable at all times whilst this item of plant is in operation. References: AS/NZS4024.1601			
	CRUSHING	HIGH 22	MEDIUM 15
Risk Treatments in Place: Articulated Joint Locking Device This item of plant is fitted with a safety locking device to the articulated joint (either a locking arm or cylinder locking devices) and clear, legible instruction labels on both sides of the articulated joint which state that either of these devices must be engaged during any maintenance to the articulated joint. These must be present, serviceable and employed at all times whilst this item of plant is in operation. References: AS1319- , AS/NZS4024.1201			
	COLLISION	HIGH 22	MEDIUM 15
Risk Treatments in Place: Beacon This item of plant is fitted with a safety beacon. This beacon must meet the following criteria at all times whilst this item of plant fitted is in operation - - Is visible up to 200m in all directions (allowing for intermittent obstruction from the plant structure whilst the plant is in operation) - Is fitted in the most appropriate location on machine to maximise visibility without risking continual damage NOTE: more than one beacon may be fitted to meet these criteria. References: ISO20474-			
	OPERATIONAL MALFUNCTION	HIGH 22	LOW 2
Risk Treatments in Place: Plant Modification The plant is in original condition. References: ISO31000			
	ENTRAPMENT	HIGH 21	MEDIUM 15
Risk Treatments in Place: Two Operator Exits The operator cabin/work area on this item of plant has a minimum of two (2) possible exits. These must be functional and accessible at all times whenever the item of plant is manned, whether during operation or maintenance activities. References: AS3868			
	POOR VISIBILITY	HIGH 21	MEDIUM 15
Risk Treatments in Place: Windscreen Wipers The windscreen wipers and washers fitted to this item of plant must be fully functional at all times. References: AS/NZS4024.1201			
	INCORRECT OPERATION	HIGH 20	MEDIUM 14
Risk Treatments in Place: Intuitive Controls The controls fitted to this item of plant are orientated so that the movement of the control is consistent with the action of the machine e.g. moving a control lever to the left results in the machine turning to the left. This design feature must be maintained at all times whilst this item of plant is in operation. References: AS/NZS4024.1906			

HAZARD(S)		Prelim. Risk Rating	Residual Risk Rating
	STRAINS	HIGH 19	LOW 5
Risk Treatments in Place: Controls Ergonomics All controls including all levers, buttons, pedals, switches etc, are placed near the operator work position and are easy to reach and operate during the execution of the operator's normal duties. This applies for all persons within the 95th percentile of the normal population distribution. References: AS/NZS4024.1901			
	STRIKING, BURNS	HIGH 19	LOW 5
Risk Treatments in Place: Hydraulic Hose Failure Shield This item of plant is fitted with a sturdy, permanent shield(s) between the hydraulic hoses and any body parts of the operator to provide protection during a hose or component failure. This shield(s) must be present and fully functional at all times whilst this item of plant is in operation. References: AS2671, AS4024, ISO4413			
	INCORRECT OPERATION, SLIPPING	HIGH 17	LOW 6
Risk Treatments in Place: Control Levers/Pedals/Buttons All controls including all levers, buttons, pedals, switches etc. must be kept non-slip and free from damage at all times. References: AS/NZS4024.1901			
	SLIPPING	MEDIUM 12	LOW 6
Risk Treatments in Place: Operator Work Area Access/Egress Safe access and egress to the cabin/work area(s) must be maintained at all times whilst this item of plant is in operation. It must be non slip, free from damage, located at a height so as to not cause undue body stresses and strains with three points of contact available to personnel at all times. All personnel must - 1. Always face the item of plant during access and egress. 2. Always maintain three points of contact during access and egress. 3. Never carry an object(s) in his/her hand(s) during access and egress. 4. Never jump off machine. References: AS3868			
	FALLING, SLIPPING	MEDIUM 12	LOW 6
Risk Treatments in Place: Access/Egress Instruction Label An instruction label is fitted adjacent access/egress areas to advise all personnel of the following - 1. Always face the item of plant during access and egress. 2. Always maintain three points of contact during access and egress. 3. Ensure the steps are clean. 4. Never jump off machine. This label must be clear and legible at all times whilst this item of plant is in operation. References: ISO31000			
	POOR VISIBILITY, COLLISION	MEDIUM 12	MEDIUM 11
Risk Treatments in Place: Operator Mirrors The operator rear view mirrors fitted to this item of plant must be fully functional and kept clean at all times. There must always be at least one mirror on each side to provide rear vision to the operator to avoid striking bystanders and objects. References: ISO14401.1, AS/NZS4024.1201			

HAZARD(S)		Prelim. Risk Rating	Residual Risk Rating
	ELECTRIC SHOCK, BURNS	MEDIUM 12	LOW 6
	Risk Treatments in Place: Battery Cover All batteries fitted to this item of plant are constrained to prevent displacement & fitted with a permanent sturdy cover which allows for ventilation. The constraint and cover must be present and fully functional and serviceable at all times whilst this item of plant is in operation. References: AS/NZS4024.1201		
	INCORRECT OPERATION, SLIPPING	MEDIUM 9	LOW 4
	Risk Treatments in Place: Operator Floor All work area floors are non-slip and free from damage & debris. Floor area must remain non-slip and free from damage & debris, including rubbish, tools and other items, at all times whilst this item of plant is in use. References: AS/NZS4024.1201, ISO20474-		
	STRAINS	MEDIUM 9	LOW 1
	Risk Treatments in Place: Operator Seat The operator seat fitted to this item of plant must remain free from damage and tears, and be permanently and securely fitted at all times. References: AS/NZS4024.1401, ISO20474-		
	HEAT STROKE, DEHYDRATION	MEDIUM 9	LOW 4
	Risk Treatments in Place: Air Conditioning This item of plant is fitted with an air conditioned cabin. This air conditioned cabin helps control the air quality and temperature for the operator and also provides shade from the sun. The air conditioner must be fully functional and serviceable at all times whilst this item of plant is in operation. References: ISO31000		
	BURNS	MEDIUM 9	LOW 5
	Risk Treatments in Place: Exhaust The engine exhaust on this item of plant is fitted with a guard to prevent injury to any person and control the risk of initiating a fire. It must be present and fully functional and serviceable at all times whilst this item of plant is in operation. References: AS/NZS4024.1201		
	CRUSHING, COLLISION	CRITICAL 25	MEDIUM 15
	Risk Treatments in Place: Brakes The brakes fitted to this item of plant must be fully functional at all times whilst this item of plant is in operation. The brakes must be regularly inspected and tested. These inspections and tests must be documented as part of your plant safety programme. References: AS2958		
	CURRENT OR PREVIOUS STRUCTURAL DAMAGE	CRITICAL 25	MEDIUM 15
	Risk Treatments in Place: Structural Integrity Regular checks for structural damage must be undertaken. Look for cracks in frames/chassis (current or repaired), bends or damage to structural components, etc. References: ISO31000		

MAINTENANCE

HAZARD(S)	Prelim. Risk Rating	Residual Risk Rating
 INCORRECT OPERATION	HIGH 22	MEDIUM 15
Risk Treatments in Place: Maintenance Manual The manufacturer's maintenance manual(s) has been supplied for this item of plant These manual(s) must be available at all times to all users and maintenance staff of this item of plant. All users and maintenance staff must read and be familiar with these handbook(s) prior to maintaining or repairing this item of plant. A complete risk assessment/JSEA must be undertaken covering all inspection, maintenance, servicing and transportation requirements of this piece of plant prior to use. A full assessment of the competence of people using the book(s) must also be undertaken References: Work Health & Safety Act & Regulations-		
 CRUSHING	HIGH 22	MEDIUM 15
Risk Treatments in Place: ROPS Damage The Roll Over Protective Structure (ROPS) fitted to this item of plant must remain free from damage at all times whilst this item of plant is in operation. References: AS2294, ISO3471		
 STRIKING, BURNS	HIGH 22	MEDIUM 15
Risk Treatments in Place: Hydraulic Damage The hydraulic hoses to this item of plant are free from damage and protected against damage arising from contact with the plant structure. Ensure that hoses are free from damage and that protection is in place at all times whilst this item of plant is in operation. Inspection of the hydraulic hoses and protection system should be conducted regularly and documented as part of your plant safety programme. References: AS2671, AS4024, ISO4413		
 OPERATIONAL MALFUNCTION	HIGH 22	LOW 2
Risk Treatments in Place: Major Fluid Leaks This item of plant must remain free from leaks at all times whilst in operation (this includes engine, transmission, cooling system, air, fuel, drive line, wheel hubs, steering and hydraulics). Development of a major leak will require this item of plant to be stood-down until repaired. Minor leaks detected must be repaired within 1-14 days. References: ISO31000		
 INSTABILITY, COLLISION	HIGH 22	MEDIUM 15
Risk Treatments in Place: Tyres The tyres and wheel components must be inspected as part of a "pre start" checklist. These inspections must be documented as part of your plant safety programme. References: ISO31000		
 OPERATIONAL MALFUNCTION	HIGH 21	MEDIUM 15
Risk Treatments in Place: Service Records Service and maintenance records are available for this item of plant. These records must continue to be maintained and stored in a secure area as part of your plant safety management programme. This programme includes the undertaking of regular inspections concerning the general condition of the item of plant including (but not limited to) tyre condition, oil levels and wear on critical items such as brakes and steering, etc. All OEM prescribed, scheduled and non scheduled maintenance must also be documented as part of these records and attended to within a risk management framework. References: Work Health & Safety Act & Regulations-		

HAZARD(S)	Prelim. Risk Rating	Residual Risk Rating
 POOR VISIBILITY	MEDIUM 9	LOW 4
Risk Treatments in Place: Windows & Screens Ensure the cabin/work area safety glass windows and screens are kept clean and free from cracks and other damage at all times whilst this item of plant is in use.		
References: ISO20474- , AS/NZS4024.1201		

SECTION 6 IMAGES AND NOTES

IMAGES

- No Images Available -

NOTES

- No Notes Available -

RISK MANAGEMENT REPORT

TYPE	Rollers, Padfoot Self Propelled	Report Number	FL 20171103-1808
MAKE	Dynapac	Date	03-Nov-2017
MODEL	CA302PD	Created By	LUKE GRAHAM
ASSET NUMBER	11002024	Assessor	LUKE GRAHAM
REGISTRATION	c01423	Assist. Assessor(s)	
		Owner	Flexihire Pty Ltd
		Assessment Purpose	Hire
		State	QLD

OPERATOR ACKNOWLEDGEMENT

I the undersigned acknowledge that I have read and understand the risk management report described above.

I also acknowledge that I have received a copy of this risk management report.

<u>DATE</u>	<u>NAME</u>	<u>COMPANY/POSITION</u>	<u>SIGNATURE</u>

 ABN: 66 631 834 903	ITP No. 0000-ITP-EVC-01	INSPECTION AND TESTING PLAN
	Project: QUT Open Air Sports Court	Environmental controls

References:	Project specification and drawings	Prepared by:	V Hemsley	Date Prepared:	30/11/2021
Lot Location:	60A Gardens Point Rd, Brisbane City	Approved by:	N Carsburg	Date Approved:	30/11/2021

Item No	Check Item	Description	Check	Witness Point	Hold Point	Conforming
1.	Check Item	Approval to commence works onsite. Permission to begin establishing environmental controls onsite is granted by the Principal Contractor.				
2.	Check item	Erosion and Sediment Control Drawings. Drawings detailing the erosion and sediment control devices to be installed are approved and current				
3.	Check item	Staged implementation. Erosion and sediment control devices are installed in a staged manner so that the site is not at risk during construction works.				
4.	Check item	Final installation. All erosion and sediment control devices are fully installed in accordance with the drawings (if devices can't be installed or have been modified this is to be marked up on a plan so that there is always a controlled document detailing installation measures onsite).				

Lot Verification & Conformance - All conformance data including survey, materials and construction completed and attached. Any NCR's rectified and closed.

Contractors Representative	Date	Clients Representative	Date
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ROD - 0417 779 245	WEEKLY PROGRAMME - CIVIL WORKS		MONTH - DECEMBER 2021			
<u>Day/Date</u>	MONDAY 20/12/2021	TUESDAY 21/12/2021	WEDNESDAY 22/12/2021	THURSDAY 23/12/2021	FRIDAY 24/12/2021	SATURDAY 25/12/2021
	Cancelled till 2022	Cancelled till 2022	Cancelled till 2022			
<u>Job Site</u>	Insite Fitzgibbon	Insite Fitzgibbon	Warrell Durack			
<u>Activity/Task</u>	Final trim 3.10/ 3.11	Final trim 3.10/ 3.11	Topsoil removal 3.1			
Resources	Pozi	Pozi	5T Combo			
	3T roller	3T roller				
	Labour TS	Labour TS				
	Small Watercart	Small Watercart				
<u>Job Site</u>	Kane Kingston	Kane Kingston	Kane Kingston			
<u>Activity/Task</u>	3.4 Cut to Waste	3.4 Cut to Waste	3.4 Cut to Waste			
			Float for 21tn exc			
Resources	21Tn Callum	21Tn Callum	21Tn Callum			
	Labour	Labour	Labour			
	Supervision Shaun W total station	Supervision Shaun W total station	Supervision Shaun W total station			
	Pink Haulage	Pink Haulage	Pink Haulage			
	Watercart	Watercart	Watercart			
<u>Job Site</u>	Warrell Clonrf	Warrell Clonrf				
	VW013	VW013				
<u>Activity/Task</u>						
Resources						
	Pozi	Pozi				
	CBR15 GLB	CBR15 GLB				
	3T roller	3T roller				
	Labour	Labour				
<u>Job Site</u>	Modus Woolloongabba	Modus Woolloongabba				
<u>Activity/Task</u>	VW009	VW009				
Resources						
	3.5tn Combo	3.5tn Combo				

ROD - 0417 779 245	WEEKLY PROGRAMME - CIVIL WORKS		MONTH - DECEMBER 2021			
<u>Day/Date</u>	MONDAY 20/12/2021	TUESDAY 21/12/2021	WEDNESDAY 22/12/2021	THURSDAY 23/12/2021	FRIDAY 24/12/2021	SATURDAY 25/12/2021
<u>Job Site</u>		Paynters Lawnton	Paynters Lawnton			
<u>Activity/Task</u>		pick up Rumble grid	VW010 Site clean up			
Resources		truck	Bobcat			
			Truck			
<u>Job Site</u>	Kane QUT	Kane QUT	Kane QUT			
<u>Activity/Task</u>	VW002	VW002	VW002			
		Float out for Excavator	Float out for roller			
	23tn Exc Pat	23tn Exc Pat	Pat Roller operator			
Resources	Dave supervision	Dave supervision	Dave supervision			
	Lantrack t&D's	Drott	Drott			
	12-15T smooth drumb roller	CBR15 GLB Truck and Dogs	CBR15 GLB Truck and Dogs			
	CS	Labour/ Roller Mike	Labour Mike			
		12-15T smooth drumb roller	12-15T smooth drumb roller			
		CS	CS			
		watercart	Watercart			
<u>Job Site</u>	Modus Stafford	Modus Stafford				
<u>Activity/Task</u>	5.9 CBR45 Driveway areas	5.9 CBR45 Driveway areas				
	VW003					
Resources	Combo Pete	Combo Pete				
	CBR45 Boral					
	Roller	Roller				
	10tn Exc					

December 2021

18
Saturday

52 - 13 Week 50

Kane - Quat.

604 Garden Point Rd - City

onsite 6.30 - 3.30.

Dase = Supervision + Survey.

Par - 23T Rec (Doosan.)

Caesburg TIGERS

Kind 031 WER - 8 load @ 12m³ - 96

Josh 914 W84 - 5 load @ 10m³ - 50

2. Louise 565 VNP - 7 load @ 10 m³ - 70

Rev 760 VAS - 7 load @ 10 m³ - 70

Design VGS AVU - 5 load @ 12m³ - 60

Shane 811 T&Q - 7 load @ 10m³ + 1 x 10m³ trailer. -50

Daily Total 426 m^3

+ VW002 Progressive Total 118

V. Wool 8/0 Subgrade cut + load out? 544 m³

NB Approx 100mm clearance on stormwater pipe at street side of court cut.

- water egress from western face of cut.

Multiple wet areas on floor of subgrade cut.

Soil To be Removed Court Area Approx 73 m³ solid

West, North + east Batter approx 108m

5 Kiosk area + Ramp Approx 60 m³

Kevin delivered Bobcat with broom

241 m³ solid

Par used Broom to Sweep Street Approx 30 mins.

July			August			September			October			November			December		
W	T	F	W	T	F	W	T	F	W	T	F	W	T	F	W	T	F
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
21	22	23	24	25	26	27	28	29	30	31							
28	29	30	31														





Plant / Labour / Supplier	ID	Day	Date	Attachments	Customer	Address	Suburb	Operator	Notes	Docket	Invoice	Work Order Num	Customer Order Number	Contact	Supplier	Asset #	Date Added
Machine: 10m3 Tipper																	
	153227	Tue	07/12/21		Carsburg Civil Pty Ltd	60A Gardens Point Rd	City	Kidd Moors - 045	Kidd after Gravel deliveries. Variation Works - VW001. QUT Open Air Sports Court.	153227	272058		KANE-122021/VW001	Rod Carsburg - C	Carsburg Earthmoving Pty Ltd	Kidd/T87	03/12/2021 06:32:21
	153821	Sat	18/12/21		Carsburg Civil Pty Ltd	60A Gardens Point Rd	City	Kidd Moors - 045	QUT Open Air Sports Court. Variation Works VW002.Depot Start Time - 5:30am. Fill b	153821	272150		KANE-122021/VW002	Rod Carsburg - C	Carsburg Earthmoving Pty Ltd	Kidd/T87	16/12/2021 15:18:52
	153822	Sat	18/12/21		Carsburg Civil Pty Ltd	60A Gardens Point Rd	City	Kevin Woodbury	QUT Open Air Sports Court. Variation Works VW002.Depot Start Time - 5:30am. Fill b	153822	272150		KANE-122021/VW002	Rod Carsburg - C	Carsburg Earthmoving Pty Ltd	Keiv/T79	16/12/2021 15:18:52
	153823	Sat	18/12/21		Carsburg Civil Pty Ltd	60A Gardens Point Rd	City	Darren Willcock -	Take T99, QUT Open Air Sports Court. Variation Works VW002.Depot Start Time - 5:30	153823	272150		KANE-122021/VW002	Rod Carsburg - C	Carsburg Earthmoving Pty Ltd	Spare/TSpare	16/12/2021 15:18:52
	153825	Sat	18/12/21		Carsburg Civil Pty Ltd	60A Gardens Point Rd	City	Lawrie Knight - +6	QUT Open Air Sports Court. Variation Works VW002.Depot Start Time - 5:30am. Fill b	153825	272150		KANE-122021/VW002	Rod Carsburg - C	Carsburg Earthmoving Pty Ltd	Spare/TSpare	16/12/2021 15:18:52
	153829	Sat	18/12/21		Carsburg Civil Pty Ltd	60A Gardens Point Rd	City	Josh Flaherty - 04	QUT Open Air Sports Court. Variation Works VW002.Depot Start Time - 5:30am. Fill b	153829	272150		KANE-122021/VW002	Rod Carsburg - C	Carsburg Earthmoving Pty Ltd	Josh/T83	16/12/2021 15:28:12
	153879	Fri	17/12/21		Carsburg Civil Pty Ltd	60A Gardens Point Rd	City	Ash Turnbull - +6	QUT Open Air Sports Court. Variation Works VW002.Fill back to the yard Banyo.	153879	272150		KANE-122021/VW002	Rod Carsburg - C	Carsburg Earthmoving Pty Ltd	Ash/T64	17/12/2021 12:34:35
	153886	Fri	17/12/21		Carsburg Civil Pty Ltd	60A Gardens Point Rd	City	Sean Bruyn - 041	QUT Open Air Sports Court. Variation Works VW002.Fill back to the yard Banyo.	153886	272150		KANE-122021/VW002	Rod Carsburg - C	Carsburg Earthmoving Pty Ltd	Sean U5/T99	17/12/2021 13:05:08
	153912	Mon	20/12/21		Carsburg Civil Pty Ltd	60A Gardens Point Rd	City	Lawrie Knight - +6	QUT Open Air Sports Court. Variation Works, VW002	153912	272310		KANE-122021/VW002	Rod Carsburg - C	Carsburg Earthmoving Pty Ltd	Lawrie/T81	20/12/2021 06:45:31
	153913	Mon	20/12/21		Carsburg Civil Pty Ltd	60A Gardens Point Rd	City	Sean Bruyn - 041	How to charge Supply?QUT Open Air Sports Court. Variation Works, VW002	153913	272310		KANE-122021/VW002	Rod Carsburg - C	Carsburg Earthmoving Pty Ltd	Sean U5/T99	20/12/2021 06:51:47
	153945	Tue	21/12/21		Carsburg Civil Pty Ltd	60A Gardens Point Rd	City	Lawrie Knight - +6	How to charge Supply?TAKE 1 X BODY LOAD OF CBR from CEM BANYO & BRING FILL B	153945	272298		KANE-122021/VW002	Rod Carsburg - C	Carsburg Earthmoving Pty Ltd	Lawrie/T81	20/12/2021 15:03:17
	153946	Tue	21/12/21		Carsburg Civil Pty Ltd	60A Gardens Point Rd	City	James Mulcahy -	TAKE 1 X BODY LOAD OF CBR from CEM BANYO & BRING FILL BACK TO YARD. WITH O	153946	272298		KANE-122021/VW002	Rod Carsburg - C	Carsburg Earthmoving Pty Ltd	Spare/T75	20/12/2021 15:04:48
	154378	Mon	17/01/22		Carsburg Civil Pty Ltd	60A Gardens Point Rd	City	Shane Micklebore	QUT Open Air Sports Court. Contract works - Cut to waste 3.4.	154378	272444		KANE-122021	Rod Carsburg - C	Carsburg Earthmoving Pty Ltd	Shane.M/T74	13/01/2022 09:21:12
	154379	Mon	17/01/22		Carsburg Civil Pty Ltd	60A Gardens Point Rd	City	Shane Micklebore	QUT Open Air Sports Court. Variation Works, VW003 - Sub Grade Replacement.	154379	272443		KANE-122021/VW003	Rod Carsburg - C	Carsburg Earthmoving Pty Ltd	Shane.M/T74	13/01/2022 09:21:20
	154526	Tue	18/01/22		Carsburg Civil Pty Ltd	60A Gardens Point Rd	City	Shane Micklebore	QUT Open Air Sports Court. Variation Works, VW003 - Sub Grade Replacement.	154526	272443		KANE-122021/VW003	Rod Carsburg - C	Carsburg Earthmoving Pty Ltd	Shane.M/T74	17/01/2022 14:00:03
	154910	Tue	25/01/22		Carsburg Civil Pty Ltd	60A Gardens Point Rd	City	James Mulcahy -	Ring if we get truck. QUT Open Air Sports Court. Contract works - VW003	154910	272567		KANE-122021/VW003	Rod Carsburg - C	Carsburg Earthmoving Pty Ltd	Spare/T75	25/01/2022 09:05:25
Machine: 22-24m3 Truck & Dog																	
	153440	Wed	08/12/21		Carsburg Civil Pty Ltd	60A Gardens Point Rd	City	Rod Carsburg - 04	Lantrak x 2. QUT Open Air Sports Court. Contrcat Works - Topsoil removal 3.3.dump a	A-17099	2304716-1	A-17099	KANE-122021	Rod Carsburg - C	Lantrak Pty Ltd	Lantrack T&Dog	07/12/2021 16:23:04
	153510	Mon	20/12/21		Carsburg Civil Pty Ltd	60A Gardens Point Rd	City	Rod Carsburg - 04	4 x Lantrak with P/O A-17099. 2. QUT Open Air Sports Court. Contract Works - Cut to	A-17099	2305260-1	A-17099	KANE-122021	Rod Carsburg - C	Lantrak Pty Ltd	Lantrack T&Dog	09/12/2021 09:23:00
	153511	Wed	15/12/21		Carsburg Civil Pty Ltd	60A Gardens Point Rd	City	Rod Carsburg - 04	Lantrak with P/O A-17099. 2. QUT Open Air Sports Court. Contract Works - Cut to wa	A-17099	2305164-1	A-17099	KANE-122021	Rod Carsburg - C	Lantrak Pty Ltd	Lantrack T&Dog	09/12/2021 09:23:09
	153686	Thu	16/12/21		Carsburg Civil Pty Ltd	60A Gardens Point Rd	City	Rod Carsburg - 04	Lantrak with P/O A-17099. 2. QUT Open Air Sports Court. Contract Works - Cut to wa	A-17099	2305164-1	A-17099	KANE-122021	Rod Carsburg - C	Lantrak Pty Ltd	Lantrack T&Dog	13/12/2021 17:17:51
	153826	Sat	18/12/21		Carsburg Civil Pty Ltd	60A Gardens Point Rd	City	Shane Micklebore	QUT Open Air Sports Court. Variation Works VW002.Depot Start Time - 5:30am. Fill b	153826	272149		KANE-122021/VW002	Rod Carsburg - C	Carsburg Earthmoving Pty Ltd	Shane M/T74 & T80	16/12/2021 15:18:59
	153854	Fri	17/12/21		Carsburg Civil Pty Ltd	60A Gardens Point Rd	City	Rod Carsburg - 04	Lantrak with P/O A-17099. 2. QUT Open Air Sports Court. Contract Works - Cut to wa	A-17099	2305164-1	A-17099	KANE-122021	Rod Carsburg - C	Lantrak Pty Ltd	Lantrack T&Dog	17/12/2021 06:16:45
	153897	Mon	20/12/21		Carsburg Civil Pty Ltd	60A Gardens Point Rd	City	Dave Reeve - 040	LANTRAK SUPPLY with P/O A-17143/VW002. QUT Open Air Sports Court. Variation Wd	A-17143	2305264-1	A-17143/VW002	KANE-122021/VW002	Rod Carsburg - C	Lantrak Pty Ltd	Lantrack T&Dog	17/12/2021 14:56:54
	154229	Fri	17/12/21		Carsburg Civil Pty Ltd	60A Gardens Point Rd	City	Rod Carsburg - 04	Lantrak with P/O A-17099. 2. QUT Open Air Sports Court. Contract Works - Cut to wa	A-17099	2305248-1	A-17099	KANE-122021	Rod Carsburg - C	Lantrak Pty Ltd	Lantrack T&Dog	10/01/2022 12:15:06
Machine: Combo 4.5T - 6 Tonne																	
	154342	Mon	17/01/22	Vib Plate	Carsburg Civil Pty Ltd	60A Gardens Point Rd	City	Peter Martin - +6	QUT Open Air Sports Court. Contract works - Cut to waste 3.4.	154342	272472	A-17209	KANE-122021	Rod Carsburg - C	United Earthmoving	PETER MARTEN	12/01/2022 13:22:39
	154343	Mon	17/01/22	Vib Plate	Carsburg Civil Pty Ltd	60A Gardens Point Rd	City	Peter Martin - +6	QUT Open Air Sports Court. Variation Works, VW003 - Sub Grade Replacement.	154343	272473	A-17208	KANE-122021/VW003	Rod Carsburg - C	United Earthmoving	PETER MARTEN	12/01/2022 13:24:15
	154525	Tue	18/01/22	Vib Plate	Carsburg Civil Pty Ltd	60A Gardens Point Rd	City	Peter Martin - +6	QUT Open Air Sports Court. Variation Works, VW003 - Sub Grade Replacement.	154525	272473	A-17209	KANE-122021/VW003	Rod Carsburg - C	United Earthmoving	PETER MARTEN	17/01/2022 13:59:54
	154777	Tue	25/01/22	Borer(450)	Carsburg Civil Pty Ltd	60A Gardens Point Rd	City	Peter Martin - +6	Rod booked with Sammy over the phone on 21/01. Pete Martin if possible. QUT Open	154777	272567	A-17252	KANE-122021/VW003	Rod Carsburg - C	United Earthmoving	PETER MARTEN	21/01/2022 07:10:07
	154962	Tue	01/02/22	Borer(600)	Carsburg Civil Pty Ltd	60A Gardens Point Rd	City	Craig Davis - +614	4 holes to bore. Pete Martin if possible. QUT Open Air Sports Court. Contract works -	154962	272820	A-17274	KANE-122021/VW004	Rod Carsburg - C	Earthy (Aust) Pty Ltd	CRAIG DAVIS	27/01/2022 11:31:45
Machine: Drott																	
	153811	Tue	21/12/21		Carsburg Civil Pty Ltd	60A Gardens Point Rd	City	Sean Bruyn - 041	QUT Open Air Sports Court. Variation Works, VW002 - Sub Grade Replacement.	153811	272285		KANE-122021/VW002	Rod Carsburg - C	Carsburg Earthmoving Pty Ltd	Sean U5/T99	16/12/2021 14:41:22
	153812	Wed	22/12/21		Carsburg Civil Pty Ltd	60A Gardens Point Rd	City	Sean Bruyn - 041	QUT Open Air Sports Court. Variation Works, VW002 - Sub Grade Replacement.	153812	272307		KANE-122021/VW002	Rod Carsburg - C	Carsburg Earthmoving Pty Ltd	Sean U5/T99	16/12/2021 14:50:27
Machine: Equipment Rental																	
	153868	Mon	20/12/21	Roller	Carsburg Civil Pty Ltd	60A Gardens Point Rd	City	Dave Reeve - 040	12tn smooth drum roller from Flexihire Brisbane with P/O A-17136/VW002QUT Open	A-17136	715442	A-17136/VW002	KANE-122021/VW002	Rod Carsburg - C	Flexihire Pty Ltd	Equipment Rental	17/12/2021 07:57:39
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	153900	Wed	22/12/21	Roller	Carsburg Civil Pty Ltd	60A Gardens Point Rd	City	Dave Reeve - 040	12tn smooth drum roller from Flexihire Brisbane with P/O A-17136/VW002QUT Open	A-17136	715442	A-17136/VW002	KANE-122021/VW002	Rod Carsburg - C	Flexihire Pty Ltd	Equipment Rental	17/12/2021 15:04:23
	153952	Tue	21/12/21	Global Synthetics	Carsburg Civil Pty Ltd	60A Gardens Point Rd	City	Arty Hawkins - 04	2 x Rolls (4.7x100m) of Geofabric from Global Synthetics with P/O A-17156/VW002.	A-17156	3994365	A-17156/VW002	KANE-122021/VW002	Rod Carsburg - C	Global Synthetics	Geofab	21/12/2021 06:41:07
Machine: Excavator 23T																	
	153224	Tue	07/12/21		Carsburg Civil Pty Ltd	60A Gardens Point Rd	City	Callum Thorpe - 0	Changed to 23T. QUT Open Air Sports Court. Contrcat Works - Temp entrance 2.2 & S	153224	271999		KANE-122021	Rod Carsburg - C	Carsburg Earthmoving Pty Ltd	23 T/ U327	03/12/2021 06:29:21
	153226	Tue	07/12/21		Carsburg Civil Pty Ltd	60A Gardens Point Rd	City	Callum Thorpe - 0	Changed to 23T. Variation Works - VW001. QUT Open Air Sports Court.Can you please	153226	271998		KANE-122021/VW001	Rod Carsburg - C	Carsburg Earthmoving Pty Ltd	23 T/ U327	03/12/2021 06:31:21
	153228	Wed	08/12/21		Carsburg Civil Pty Ltd	60A Gardens Point Rd	City	Pat Yaxley - 0407	Changed to 23T. QUT Open Air Sports Court. Contrcat Works - Topsoil removal 3.3.	153228	271999		KANE-122021	Rod Carsburg - C	Carsburg Earthmoving Pty Ltd	23 T/ U327	03/12/2021 06:32:59
	153508	Tue	14/12/21		Carsburg Civil Pty Ltd	60A Gardens Point Rd	City	Pat Yaxley - 0407	Changed to 23T. . QUT Open Air Sports Court. Contract Works - Cut to waste 3.4	153508	272165		KANE-122021	Rod Carsburg - C	Carsburg Earthmoving Pty Ltd	23 T/ U327	09/12/2021 09:22:46
	153509	Wed	15/12/21		Carsburg Civil Pty Ltd	60A Gardens Point Rd	City	Pat Yaxley - 0407	QUT Open Air Sports Court. Contrcat Works - Cut to waste 3.4	153509	272151		KANE-122021	Rod Carsburg - C	Carsburg Earthmoving Pty Ltd	23 T/ U327	09/12/2021 09:22:53
	153687	Thu	16/12/21		Carsburg Civil Pty Ltd	60A Gardens Point Rd	City	Pat Yaxley - 0407	Changed to 23T. . QUT Open Air Sports Court. Contract Works - Cut to waste 3.4Depo	153687	272151		KANE-122021	Rod Carsburg - C	Carsburg Earthmoving Pty Ltd	23 T/ U327	13/12/2021 17:18:00
	153820	Sat	18/12/21		Carsburg Civil Pty Ltd	60A Gardens Point Rd	City	Pat Yaxley - 0407	QUT Open Air Sports Court. Variation Works VW002.	153820	272151		KANE-122021	Rod Carsburg - C	Carsburg Earthmoving Pty Ltd	23 T/ U327	16/12/2021 15:17:57
	153855	Fri	17/12/21		Carsburg Civil Pty Ltd	60A Gardens Point Rd	City	Pat Yaxley - 0407	Changed to 23T. . QUT Open Air Sports Court. Contrcat Works - Cut to waste 3.4Depo	153855	272151		KANE-122021	Rod Carsburg - C	Carsburg Earthmoving Pty Ltd	23 T/ U327	17/12/2021 06:16:51
	153896	Mon	20/12/21		Carsburg Civil Pty Ltd	60A Gardens Point Rd	City	Pat Yaxley - 0407	Changed to 23T. . QUT Open Air Sports Court. Variation Works VW002.Depot Start Ti	153896	272228		KANE-122021/VW002	Rod Carsburg - C	Carsburg Earthmoving Pty Ltd	23 T/ U327	17/12/2021 14:55:49
	153942	Tue	21/12/21		Carsburg Civil Pty Ltd	60A Gardens Point Rd	City	Pat Yaxley - 0407	Changed to 23T. . QUT Open Air Sports Court. Variation Works VW002.Depot Start Ti	153942	272228		KANE-122021/VW002	Rod Carsburg - C	Carsburg Earthmoving Pty Ltd	23 T/ U327	20/12/2021 13:52:09
Machine: Labour Hire																	
	153580	Tue	14/12/21	Total Station, Site Super	Carsburg Civil Pty Ltd	60A Gardens Point Rd	City	David Reeve - +6	QUT Open Air Sports Court. Contrcat Works - Cut to waste 3.4	153580	LAB		KANE-122021	Rod Carsburg - C	Carsburg Earthmoving Pty Ltd	Labour Site Foreman	10/12/2021 11:19:52
	153582	Wed	15/12/21	Total Station, Site Super	Carsburg Civil Pty Ltd	60A Gardens Point Rd	City	David Reeve - +6	QUT Open Air Sports Court. Contrcat Works - Cut to waste 3.4	153582	LAB		KANE-122021	Rod Carsburg - C	Carsburg Earthmoving Pty Ltd	Labour Site Foreman	10/12/2021 11:20:24
	153583	Mon	20/12/21	Total Station, Site Super	Carsburg Civil Pty Ltd	60A Gardens Point Rd	City	David Reeve - +6	QUT Open Air Sports Court. Variation Works, VW002	153583	LAB		KANE-122021/VW002	Rod Carsburg - C	Carsburg Earthmoving Pty Ltd	Labour Site Foreman	10/12/2021 11:20:55
	153688	Thu	16/12/21	Total Station, Site Super	Carsburg Civil Pty Ltd	60A Gardens Point Rd	City	David Reeve - +6	QUT Open Air Sports Court. Contrcat Works - Cut to waste 3.4Depot Start Time - 5:30	153688	LAB		KANE-122021	Rod Carsburg - C	Carsburg Earthmoving Pty Ltd	Labour Site Foreman	13/12/2021 17:18:08
	153809	Fri	17/12/21	Total Station, Site Super	Carsburg Civil Pty Ltd	60A Gardens Point Rd	City	David Reeve - +6	QUT Open Air Sports Court. Variation Works VW002.Depot Start Time - 5:30am.	153809	LAB		KANE-122021/VW002	Rod Carsburg - C	Carsburg Earthmoving Pty Ltd	Labour Site Foreman	16/12/2021 14:37:59
	153817	Tue	21/12/21	Total Station, Site Super	Carsburg Civil Pty Ltd	60A Gardens Point Rd	City	David Reeve - +6	6am onsite. QUT Open Air Sports Court. Variation Works, VW002 - Sub Grade Replac	153817	LAB		KANE-122021/VW002	Rod Carsburg - C	Carsburg Earthmoving Pty Ltd	Labour Site Foreman	16/12/2021 14:54:50
	153818	Wed	22/12/21	Total Station, Site Super	Carsburg Civil Pty Ltd	60A Gardens Point Rd	City	David Reeve - +6	QUT Open Air Sports Court. Variation Works, VW002 - Sub Grade Replacement.	153818	LAB		KANE-122021/VW002	Rod Carsburg - C	Carsburg Earthmoving Pty Ltd	Labour Site Foreman	16/12/2021 14:55:07
	153827	Sat	18/12/21	Site Supervision	Carsburg Civil Pty Ltd	60A Gardens Point Rd	City	David Reeve - +6	QUT Open Air Sports Court. Variation Works VW002.	153827	LAB		KANE-122021/VW002	Rod Carsburg - C	Carsburg Earthmoving Pty Ltd	Labour Site Foreman	16/12/2021 15:19:11
	153856	Fri	17/12/21	Total Station, Site Super	Carsburg Civil Pty Ltd	60A Gardens Point Rd	City	David Reeve - +6	QUT Open Air Sports Court. Contrcat Works - Cut to waste 3.4Depot Start Time - 5:30	153856	LAB		KANE-122021	Rod Carsburg - C	Carsburg Earthmoving Pty Ltd	Labour Site Foreman	17/12/2021 06:17:01
	153901	Wed	22/12/21		Carsburg Civil Pty Ltd	60A Gardens Point Rd	City	Pat Yaxley - 0407	Roller/Labour. QUT Open Air Sports Court. Variation Works, VW002 - Sub Grade Repl	153901	272307		KANE-122021/VW002	Rod Carsburg - C	Carsburg Earthmoving Pty Ltd	Labour Hire	17/12/2021 15:05:59
	153944	Tue	21/12/21		Carsburg Civil Pty Ltd												

Call forward sheet

Site address: QUT - Gardens Point Rd, City
 Client: KANE
 Contact No: 0417 779 245

Project No: 2498
 Site Manager: Rod Carsburg/Dave Reeve
 Office Number: 3287 8033

BOQ/Task No.	Equipment/Supplier/Subby	Order No.	Ordering		Contractor/Supplier details			Instructions or comments
			Order Date	Start Date	Contractor	Contractor Details	Contract Rates/Notes	
2.1	Silt Fence	A-17064	3/12/21	7/12/21	Vidgil	PH: 3289 6480	40LM \$265 + \$5/LM > 40m	
1.1	Order float for 23T Exc	CIVIL	3/12/21	6/12/21	Aquaholic	PH: 0418 765 661	Pickup from CEM Yard	Please call Rod when on way, Police escort required
1.3	Organise Survey	272101	2/12/21	6/12/21	Vision Surveys	Nick 3638 0259	Standard rate \$125/hr	Review Design data, new control data
2.2	75mm gravel	50478	6/12/21	7/12/21	Carsburg		2 loads from Timms Trade Coast	
2.2, VW001	23T Excavator		3/12/21	7/12/21	Carsburg			As needed for duration of project
2.2, VW001	10m3 Tipper		3/12/21	7/12/21	Carsburg			As needed for duration of project
3.3	Lantrak Semi	A-17099	6/12/21	8/12/21	Lantrak	PH: 139 666	As per Top Soil Quote	
3.4, VW002	Lantrak Semi	A-17099	6/12/21	14/12/21	Lantrak	PH: 139 666	As per Clean Fill Quote	
3.4	10m3 Tipper		14/01/22	17/01/22	Carsburg			1 day finish off Cut to waste
3.5	12T Drott		20/12/21	22/12/21	Carsburg			1 day final trim
3.6	Geotech	A-17148	7/12/21	16/12/21	Construction Sciences	PH: 3320 8500	Broddie	Inspect subgrade
Various	Supervision			15/12/22	Carsburg		Dave Supervision	Need Total Station
VW002	13T Smooth Drum Roller	A-17136/VW002	16/12/21	17/12/21	Flexihire	PH: 3806 2291	\$235/day \$420 Float	Contact Flexihire for Stand Down no if not used
VW002	Combi Grid	A-17156	16/12/21	21/12/21	Global Synthetics	PH: 3865 7000	2 rolls 4.75m x 100m	Deliverd
VW002	10m3 Tippers / T&D's		14/12/21	17/12/21	Carsburg			As needed
VW002	CBR15	A-17133/VW002	16/12/21	21/12/21	Pinkenba Operations (GLB)	PH: 3260 2100	1007T	Dockets signed by Site Manager
VW002	12T Drott		17/12/21	21/12/21	Carsburg			
VW002	Labour		17/12/21	21/12/21	Carsburg		Mike and Pat	General Labour/Roller/Traffic Control
VW002	Watercart		20/12/21	21/12/21	Carsburg			2 days
VW002	Geotech	A-17148	17/12/21	20/12/21	Construction Sciences	PH: 3320 8500	Broddie	Proofroll and Subgrade Replacement Testing
VW002	Lantrak Semi	A-17143/VW002	17/12/21	20/12/21	Lantrak	PH: 139 666	As per Clean Fill/Shale quote	
VW002	Order float for 23T Exc	A-17076	3/12/21	21/12/21	Aquaholic	PH: 0418 765 661	Take to CEM yard	Please call Dave when on way, Police escort required
VW002	Organise Survey	21088-33	15/12/21	22/12/21	Vision Surveys	Nick 3638 0259	Standard rate \$125/hr	Subgrade replacement Volume and areas
VW003	5T Combo		14/01/22	17/01/22	Carsburg		Need a Vibrating Plate	2 days work
VW003	10m3 Tipper		14/01/22	17/01/22	Carsburg		Need a Vibrating Plate	2 days work
VW003	5T Combo		21/01/22	17/01/22	Carsburg			1 days work
VW003	10m3 Tipper		21/01/22	17/01/22	Carsburg			1 days work
VW004	5T Combo w/600 borer		28/01/22	1/02/22	Carsburg		Borer attachment	1 days work - 4 bored piers

Geotechnical Investigation Report

Kane Constructions (Qld) Pty Ltd

Date 1st December 2021

Project Number 21-S-0275

Project Name GA - QUT Basketball Court

REPORT CONTROL SHEET

RMA Ref No	21-S-0275
Site:	QUT - 60A Gardens Point Road Brisbane
Report Title:	Geotechnical Investigation Report

Document Control					
Revision	Author	Reviewer	Approved for Issue		
			Name	Signature	Date
1	Danny Coleborn RPEQ24004	Daniel Keogh QBCC15072125	Danny Coleborn RPEQ24004		01/12/2021

Disclaimer:

This report is a professional opinion based on the information available at the time of writing. It is not intended as a quote, guarantee or warranty and does not cover any latent defects.

The conclusions in this report should not be read in isolation. We recommend that its contents be reviewed in person with the author so that the assumptions and available information can be discussed in detail to enable the reader to make their own risk assessment in conjunction with information from other sources.

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1. Introduction

1.1 General

RMA Soils were requested to undertake a geotechnical investigation within Lot 654 on registered plan SP241925, 60A Gardens Point Road Brisbane. The site is part of the QUT Gardens Point Campus.

The field investigation was completed on the 22nd of November 2021. The location of the site is shown in Figures 1 & 2 presented in Appendix A.

It is understood that the proposed development likely include:

- Concrete basketball court
- Grandstand seating
- Kiosk
- Disable access
- Lighting

The concept plan is presented in Appendix B.

1.2 Scope of Services

RMA Soils component of the work is generally to undertake a site and soil assessment to inform on the civil and structural design for the construction of a basketball court and associated facilities. The objective of the geotechnical investigation was to provide information on the:

- Bearing capacity for high level & deep footings
- Subsurface profile
- Earthworks recommendations
- Pavement subgrade strength
- Earth works recommendations

To collect the appropriate data and site information, the methodology and scope of works for the investigation and laboratory testing program included:

- Supervising test pit excavation or drilling 2 boreholes up to 4m depth or prior refusal
- Drilling borehole to 1m depth to collect sample for CBR testing
- collecting samples to undertake laboratory testing to determine:
 - Plasticity
 - Material strength
- assessing the relevant site characteristics and details

2. Geotechnical Investigation

2.1 Site Description

The proposed service station site comprises two allotments, Lot 2 on registered plan SP 104884 and Lot 3 on registered plan SP121444. The allotments are bound on the southern & western sides by urban residential allotments, on the eastern side by Tor Street and on the northern side by Taylor Street. Access to the site is via Taylor Street.

The allotment previously hosted a multi-story building and basement which was demolished between the end of 2012 and beginning of 2013. Rehabilitated of the area was completed by October 2013. This is shown in Figures 3 & 4 presented in Appendix A.

At present the site is densely grassed with short, manicured grasses and sparsely timbered with small to large trees. The trees are distributed across the site with the majority towards the boundaries.

Fill material was observed and encountered across the site. This material was used to fill the basement excavation and other depressions left from the demolition. The site was then topsoiled and grassed.

The site generally falls to the south west with slope angles between 1% & 2%. Several mounds were observed across the site and these have slightly steeper slopes on the flanks.

The site characteristics are shown in Figures 5 to 10 presented in Appendix A. The site contours are shown on the contour plan presented in Appendix C.

2.2 Field Investigation

2.2.1 General

The field investigation was undertaken on the 5th of November 2021 and was carried out using a drill rig mounted on a Fuso Canter Truck.

Open flight auguring was utilised from the ground surface to the termination depth of the boreholes. The field investigation consisted of:

- drilling 2 boreholes up to 4m depth or prior refusal
- Drilling borehole to 1m depth to collect sample for CBR testing
- collecting samples to undertake laboratory testing
- assessing the relevant site characteristics and details

The soil classification descriptions, field and laboratory testing were carried out in general accordance with Australian Standards:

- AS1289-2000: Methods of Testing Soils for Engineering Purposes
- AS1726-2017: Geotechnical Site Investigations

The borehole locations are shown on the site map presented in Appendix D. The borelogs are presented in Appendix E.

2.3 Laboratory Testing

2.3.1 General

Laboratory testing was carried out on selected samples collected from the field investigation program. The testing was directed towards assessing the plasticity characteristics of the subsurface materials along with the strength of potential subgrade materials.

The laboratory testing was carried out in general accordance with the relevant Australian Standards from AS1289-2000 Methods of Testing Soils for Engineering Purposes. Laboratory testing included:

- Atterberg Limits testing – to assess plasticity of the materials
- CBR Testing – to assess strength of the proposed subgrade materials for pavement

The results of the laboratory testing shown in the Sections below.

2.3.2 Atterberg Limits Testing Results

Disturbed samples were collected from the boreholes and CBR samples during the field investigation and were used to undertake Atterberg Limits testing in accordance with AS1289.3.4.1 (LS) and 1289.3.9.1 (LL).

The Atterberg Limits test results are outlined in Table 1 below. The test reports are presented in Appendix F.

Table 1: Laboratory Test Results – Atterberg Limits

Test Locations	Depth (m)	Material Type	Liquid Limit (%)	Linear Shrinkage (%)
BH2	2.00 – 2.20	Silty Sandy CLAY		
	3.40 – 3.60	Silty Sandy CLAY		

2.3.3 CBR Testing

One bulk sample was collected from site. This was used to undertake CBR testing in accordance with AS1289.6.1.1. The sample depth was between 0.2m and 0.5m depth.

The CBR results are summarised below in Table 2 and the test reports are presented in Appendix F.

Table 2: Laboratory Test Results – CBR

Test Locations	Depth (m)	Material	Field Moisture Content (%)	Maximum Dry Density (%)	Optimum Moisture Content (%)	CBR (%)
CBR1	0.20 – 0.50					11

2.3.4 Groundwater

At the time of the investigation groundwater was not encountered within the termination depth of the boreholes.

It is considered unlikely that groundwater will influence the site. Differing material types were encountered during the drilling and where significant rainfall events occur, seepage may be expected through the more permeable soils and material interfaces during and after these events.

3. Geotechnical Assessment

3.1 Regional Geology

The 1:500,000 scale Moreton Geological Map published by the Geological Survey of Queensland in 1978 indicates that the surface and near-surface geology of the site comprises:

- Quaternary sediments: flood plains & river terraces
- Triassic age Brisbane Tuff: Rhyolitic tuff, ignimbrite, agglomerate, conglomerate, sandstone & shale
- Triassic age Ipswich Coal Measure: shale, conglomerate, sandstone, coal, siltstone, basalt & tuff
- Devonian Carboniferous age Bunya Phyllite: phyllite & greywacke
- Devonian Carboniferous age Neranleigh – Fernvale Beds: mudstone, shale, greywacke, chert, jasper, conglomerate, basic metavolcanics & pillow lava

The subject site lies within the Devonian Carboniferous age Neranleigh Fernvale Bed rocks and associated residual soils. The regional geology of the area is shown in Figure 11 presented in Appendix A.

3.2 Subsurface Investigation

3.2.1 Subsurface Profile

The site investigation consisted of drilling and logging eleven boreholes. The boreholes were drilled around the site.

FILL MATERIAL

Clayey Sandy SILT – low plasticity (ML), fine grained sand, dry to moist, soft.

Clayey Silty Gravelly SAND – low to medium plasticity (SC), fine to coarse grained sand, fine to coarse grained gravel, dry to moist, medium dense.

Clayey Silty Sandy GRAVEL – low to medium plasticity (GC), fine to coarse grained sand, fine to coarse grained gravel, dry, medium dense. Intermixed with cobbles & boulders.

Silty Sandy CLAY – medium to high plasticity (CI / CH), fine grained sand, dry to moist, firm.

NATURAL SOIL

Silty Sandy CLAY – medium to high plasticity (CI / CH), fine to coarse grained sand, moist, firm to stiff.

The borehole locations are shown on the site map presented in Appendix B. The borelogs are presented in Appendix C. A summary of the subsurface profile is shown in Table 3.

Table 3: Summary of the Subsurface Profile

Borehole		Soils		Bedrock	
Number	Depth (m)	Type	Thickness (m)	Depth (m)	Type
BH1	6.0	FILL: Clayey Sandy SILT	0.30	-	Not Encountered
		FILL: Clayey Silty Gravelly SAND	1.80		
		Silty Sandy CLAY	0.90		
BH2	6.0	FILL: Clayey Sandy SILT	0.40	-	Not Encountered
		FILL: Clayey Silty Sandy GRAVEL	0.70		
		FILL: Silty Sandy CLAY	0.80		
		Silty Sandy CLAY	2.10		

3.2.2 Assessment of Ground Conditions

As previously mentioned, this site was host to a multi-story building and possible basement prior to being demolished in 2012/13 as shown in Figures 3 & 4 presented in Appendix A.

The demolition included removal of the building, concrete footpath and driveway areas. The pile foundations were removed to an approximate depth of 4m below ground level. It is unclear if there was a basement structure within the building, and if there was, whether it was removed or not.

Borehole BH1 was drilled within the footprint of the previous building on the northern side of the pile foundation area and BH2 was drilled outside the footprint of the previous building to the north east.

Both boreholes encountered fill from the surface to depths between 1.9m and 2.1m.

The fill material within the boreholes consists of clayey gravels and sands with some sandy clay layers intermixed. The gravel and sand material appear to have a medium dense consistency and the clays appear to be firm to stiff.

Drilling for the CBR sample near the centre of the basketball court area encountered a mixture of gravel, sand, cobbles and boulders. It is likely that this area was a deeper excavation, possibly a basement structure, and was rehabilitated using a sand, gravel, rock fill mixture.

The area was then topsoiled and grassed to complete the rehabilitation.

The fill appears to have had some type of compactive effort applied during placement. This is evidenced by the drilling resistance and that there are no significant depressions (some previous settlement may have been repaired) visible across the site at present to indicate that settlement of uncompacted or poorly compacted materials has occurred.

The natural soils are generally medium to high plasticity sandy clays with dry to moist moisture conditions and firm to stiff consistency. The natural moist clays encountered in BH2 at 3.1m appear to have a firm consistency.

It is possible that cobbles and boulders will be encountered within the fill material during excavation.

Once the excavation is at the final platform height, this surface should be inspected to determine

the bearing capacity of the subgrade materials. The base of the foundations should also be inspected to determine the bearing capacity of the founding materials.

Depending on the subgrade material types and the bearing capacity of these materials, some treatment may be required to form a suitable base to support the basketball court structure. The treatment will depend on the subgrade materials.

Heavily loaded, settlement sensitive structures will most likely need to be supported on piled foundations.

Excavations within the fill material may have vertical walls in the short term, however, this will need to be confirmed by a competent Geotechnical Engineer.

3.3 Foundations

3.3.1 Site Classification

The classification of soil reactivity for a particular site to allow for the design of foundations, strictly only applies to residential buildings up to two-storeys and to other buildings of similar size, loading and flexibility as defined in accordance with AS 2870–2011.

Based on the borelogs and laboratory testing, the potential ground surface movements, Y_s , that the site overall may experience due to variations in subsurface moisture conditions during normal climatic changes, are within the range of 30 - 40mm (refer to AS2870 – Section 2).

This Y_s value indicates that the underlying soil profile has a Moderate potential to swell/shrink under normal climatic changes, in terms of reactivity. This swelling &/or shrinking of the soils, particularly clay soils, is attributed to the absorption &/or loss of moisture.

Abnormal soil moisture conditions are present on the site. These conditions are defined in AS 2870 (Clause 1.3.3) and in summary comprise:

- Unusual moisture caused by drains, channels, ponds, dams or tanks
- Growth of trees too close to a structure
- Excessive or regular watering of gardens adjacent to the structure
- Lack of maintenance of site drainage
- Failure to repair plumbing leaks

These require a 'Class P' (problem site) classification and may result in more extensive foundation works to avoid adverse foundation performance.

The site classification was determined to be P / M. This was determined by visual assessment of relevant site conditions, analysis of the soil profiles revealed by the bore logs and the results of the laboratory testing of the disturbed samples taken from the boreholes.

The site classification is based on the following:

- Zone of moisture variation of 1.8m
- Cracked zone of 0.9m deep
- $pF = 1.2$
- Possible abnormal moisture effects caused by fill

- The site as it was at the time of the investigation without undertaking further cut/fill earthworks to provide a building platform

Good practice in design, construction and management of the site will be required to accommodate the potential site movements. This will include management of surface and subsurface drainage throughout the site along with limits on landscaping and adequate moisture preparation.

3.3.2 Subsurface Strength Parameters

High level foundation systems such as raft footings may be utilised for this site. They should be designed and constructed to accommodate the potential ground movement resulting from the volume instability of the medium to highly reactive clay soils as outlined in the site classification.

All footings should extend through uncontrolled fill (if any) and found a minimum of 200mm into controlled fill or competent natural soils. Table 4 below outlines allowable bearing capacities for high level footings on the site.

Table 4: Allowable Bearing Capacities for High Level Footings (FOS = 3)

Material		Allowable Bearing Capacity (Qa) (kPa)	
		Strip Footing (min 0.3m wide)	Pad Footing (min 2.0m wide)
Fill	Medium Dense	100	100
	Firm	75	75
Clay	Firm	75	75
	Stiff	100	100
Note: FOS = 3; Values are Subject to Confirmation on Site			

The borelogs show firm to stiff within the subsurface. Bearing capacity of the soils should be confirmed prior to foundation construction.

3.3.3 Deep Foundations

General

A deep foundation system could be used for the proposed works. This would utilise bored piers (with a steel liner) / driven piles founding into the natural firm to stiff clay.

Ultimate Strength Design

The design of a deep foundation system should consider the following:

- Compressional capacity ie. base bearing and skin friction design values, this will also include negative skin friction effects

- Tensional capacity and effects ie. potential uplift due to expansive clays
- Lateral capacity of the piles
- Construction considerations

Compressional Capacity

It is recommended that the deep foundation system on this project be designed in accordance with AS 2159-2009 'Piling - Design and Installation'. This code uses the limit state design method.

In the limit state design method, the following must be taken into account:

- Limit state analysis (AS 2159-2009) - the design geotechnical strength $R_{d,g}$ is calculated by multiplying the ultimate geotechnical strength $R_{d,ug}$ by the geotechnical strength reduction factor ϕ_g ,
- Ultimate strength - the design of a single pile or a pile group must be such that both the design geotechnical strength ($R_{d,g}$) and the structural strength ($R_{d,s}$) are greater than or equal to the Design action effect (E_d)
- Serviceability - Single piles and pile groups shall be designed for serviceability by controlling or limiting pile movements.
- Durability - This is outlined in Section 6 of AS 2159-2009 and will not be discussed any further here.
- Any other factors that need to be considered i.e. stability, scour, fatigue, cyclic loading or seismic actions - As we are not aware that any of these factors will affect the pile design, they will not be considered any further.

The design geotechnical strength ($R_{d,g}$) can be calculated as the design ultimate geotechnical strength ($R_{d,ug}$) multiplied by the geotechnical strength reduction factor (ϕ_g). The ultimate geotechnical strength parameters for the materials encountered on the site are outlined in Table 5. The capacity of a driven pile may also be considered in terms of push achieved/set achieved

Table 5: Ultimate Strength Parameters

Material		Skin Friction (kPa)	Base Bearing (kPa)
Type	Strength	Bored Pile	Bored Pile
Fill	Medium Dense Firm	Not Recommended	Not Recommended
Clay	Firm	30	300
	Stiff	45	450

Material		Skin Friction (kPa)	Base Bearing (kPa)
Type	Strength	Bored Pile	Bored Pile
Notes: 1. NR - Not Recommended; NC - Not Considered in skin friction calculations. 2. Recommended geotechnical strength reduction factor (ϕ_g) = 0.45 to 0.55. Please note that the upper limit of the ϕ_g range is only appropriate for bored piers if geotechnical supervision (and certification) is carried out during construction. 3. Considering limit state analysis (AS 2159-2009), the design geotechnical strength R_g^* is calculated by multiplying the ultimate geotechnical strength R_{ug} by the geotechnical strength reduction factor ϕ_g, ie. $R_g^* = R_{ug} \times \phi_g$. 4. Should an Ultimate strength approach be adopted, a minimum factor of safety of 3.0 on base and 3.0 on skin friction is recommended. 5. Ignore top 1.2m of clay profile in skin friction calculations; shrinkage of the upper-level clays may occur.			

It is essential that foundation excavations (where applicable) be inspected by experienced geotechnical personnel to ensure the design parameters adopted are suitable for the ground conditions and to ensure that there is no soft or loose material remaining at the base of the excavations or smear on the side walls.

Ground conditions can vary, and adequate provision should be made throughout the project to vary foundations to suit differing ground conditions

Tensional Effects - Potential Uplift Due to Swelling Soils

It is recommended that individual piers be assessed for uplift capacity as well as the overall pier capacity. The following sections of the Piling Code AS 2159-2009 should be considered:

Design Requirements and Procedures – Section 3

A review of Section 3 of the piling code indicates that in Section 3.3 actions and combinations for strength and serviceability design that “Where a pile is situated in swelling soils, such as reactive clays or those subjected to frost action, allowance shall be made for the compressive and tensile actions (F_{ex}) that may be developed in the pile.” AS 2159-2009 3.3.1.2(b).

Section 3.3.2 Load combinations for strength design and where the actions are induced by ground movement, they shall be computed as below:

Structural Design – Compressive and tensile actions – Section 5.

In the case of structural design, the effect of swelling soils should be considered as part of the structural design of the foundation and as noted above.

$$S_u = 1.5F_{es} \quad \text{AS 2159-2009 3.3.2 (b)(i)(B)}$$

Where S_u is the “Ultimate value of various actions appropriate for particular combinations” AS 2159-2009 Table 1.1 (refer also AS 1170) and F_{es} is the tensile (in this case) actions in the pile induced by vertical ground movements. F_{es} can be calculated using the “Rational Pier Formula”:

$$F_{es} = 0.15 * SP * A_{mv}$$

- SP = Assessed Swell Pressure of soil (kPa)
- A_{mv} = Surface area of pile in intimate contact with soil in the zone affected by swelling (above 2.3m)

Uplift may be reduced by constructing a separation such as a sleeving between the pile shaft and the soil in the unstable upper zone.

Geotechnical Considerations

In the case of geotechnical design, the effects of swelling soils are mentioned in several sections of AS 2159-2009 Section 4 Geotechnical Design. The designer is directed to review the following sections with respect to their design:

- Soil Swelling
- Pile heave due to soil swelling

Geotechnical Design, AS 2159-2009 3.3.2(b)(ii), indicate that loads induced by soil movement shall not be taken into account.

Lateral Capacity

A preliminary assessment of the lateral capacity of the piles could be assessed using Broms method. The suggested design parameters are provided in Table 6. The values provided must be checked, and revised where appropriate, when applied loads, section size and load eccentricity are known.

An assessment of a single pile's lateral capacity is provided by using Broms Charts as shown in Appendix F. Piles are usually deemed to be classed as short when the L/B ratio is less than 10 to 12.

Table 6: Design Values for Lateral Pile Capacity Calculations

Material Type	Strength	Unit Weight γ (kN/m ³)	Cu (kPa)	C' (kPa)	ϕ' (°)	Eu (MPa)	ν
Sandy Silty Clay	Firm	17 – 19	45	2	22	10	0.30
	Stiff	18 – 19	90	5	26	15	

Cu – Undrained Cohesion; C' – Effective Cohesion; ϕ' – Effective Friction Angle; E – Youngs Modulus; ν – Poisson's Ratio.

The values shown in Table 6 refer to sections of the pile which are in full contact with the soil. It

should be recognised that there is a possibility that shrinkage cracking could coincide with the soil/pile interface.

The depth of such cracks could approach the design crack depth of 0.9m for this site. Therefore, it would be prudent to ignore the upper 0.9m of the soil profile for lateral pile capacities.

This reduction will also depend on the sensitivity and criticality of the specific componentry supported by the pile. For instance, it would be prudent to assume the full design depth of cracking (ie 4m at this site) where the effects of potential uplift and lateral movements cannot be tolerated.

The ground from 0.7m to 0.9m (lower portion of the design crack depth) could be included in the lateral loading calculations as the cracking would be minor and not sufficient to significantly impact soil performance.

This is provided additional precautions are undertaken for the variation in soil strength with fluctuations in moisture content and incorporating a high level of redundancy into the design (i.e. tolerance for potential movements). Additional precautions include:

- Adequate and maintained surface drainage
- Careful backfill of service trenches (i.e. limited use of permeable backfill materials so as not to provide a conduit for groundwater or a high level of connectivity with surface water)
- No planting of trees close to structures
- No excessive or irregular watering close to structures

3.3.4 Assessment of Basic Geotechnical Strength Reduction Factor

The pile parameters presented above are unfactored or ultimate values. A factor of safety of 3.0 should be applied to all ultimate values for working stress analysis.

Alternatively, a basic geotechnical strength reduction factor (ϕ_{gb}) is recommended for limit state design of piles in accordance with AS2159-2009 (2009).

The appropriate (ϕ_g) should be derived by the designer based on the data provided, the method of soil strength assessment and assessing the overall design average risk rating (ARR) for the site, design, level of redundancy and installation risk factors anticipated for the proposed piling system.

To assist with this process, individual risk ratings for the geotechnical components which affect the ARR for the proposed application are shown in the tables below. The value of ϕ_g for pile design should be assessed from the ARR by the pile designer, having due regard to the principal loading conditions that could affect the piles.

The rationale for the suggested IRR values provided below for the geotechnical components is as follows:

- **Geological complexity of site:** The results of the investigation show variability in the subsurface materials. Therefore, a moderate risk has been associated with this component.
- **Extent of ground investigation:** Investigation included six boreholes across the site. This is considered reasonable for the proposed development. Therefore, a low to moderate risk has been associated with this component.

- **Amount and quality of geotechnical data:** The investigation included in-situ testing of strength (dynamic penetrometer testing) together with atterberg limits and CBR tests. Therefore, a moderate to high risk has been associated with this component.

Section 4 AS2159-2009 Piling Design & Installation sets out the design considerations for the Geotechnical Design of piles. This assessment may also be related to other geotechnical structures to consider the pile (foundation) – soil interactions.

Part of this process is the assessment of the basic geotechnical strength reduction factor (ϕ_{gb}). This can be calculated using a risk assessment procedure as set out below:

- Rate each risk factor in Table 7 on a scale from 1 to 5 for the nature of the site, the available site information and the pile design and installation procedures adopted. This will produce an individual risk rating (IRR) according to the assessed level of risk, as set out in Table 8 below.
- Determine the overall design Average Risk Rating (ARR) using the weighted average of the product of all of the risk weighting factors (w_i) shown in column 2 of Table 7 times the relevant individual risk rating (IRR), as follows:
- $ARR = \sum (w_i IRR) / \sum w_i$
- Determine the basic geotechnical strength reduction factor (ϕ_{gb}) from Table 8 depending on the level of redundancy in the piling (foundation) system. Systems with a high degree of redundancy would include large pile groups under large caps, piled rafts and pile groups with more than 4 piles. Systems with a low level of redundancy won't include isolated heavily loaded piles and piles set out at large spacings.
- The Average Risk Rating that may be applied to the Site is shown in Table 7 below. Table 8 is also provided below.

Table 7: IRR Assessment

Risk Factor	Weighting Factor (wi)	Typical description of risk circumstances for individual risk rating (IRR)		
		1	3	5
		(Very low risk)	(Moderate)	(Very high risk)
Site				
Geological complexity of site	2	Horizontal strata, well-defined soil and rock characteristics	Some variability over site, but without abrupt changes in stratigraphy	Highly variable profile or presence of karstic features or steeply dipping rock levels or faults present on site, or combinations of these
Extent of ground investigation	2	Extensive drilling investigation covering whole site to an adequate depth	Some boreholes extending at least 5 pile diameters below the base of the proposed pile foundation level	Very limited investigation with few shallow boreholes

Risk Factor	Weighting Factor (wi)	Typical description of risk circumstances for individual risk rating (IRR)		
		1	3	5
		(Very low risk)	(Moderate)	(Very high risk)
Site				
Amount and quality of geotechnical data	2	Detailed information on strength compressibility of the main strata	CPT probes over full depth of proposed piles or boreholes confirming rock as proposed founding level for piles	Limited amount of simple in-situ testing (e.g. SPT) or index tests only
Method of assessment of geotechnical parameters for design	2	Based on appropriate laboratory or in- situ tests or relevant existing pile load test data	Based on site- specific correlations or on conventional laboratory or in-situ testing	Based on non-site-specific correlations with (for example) SPT data

Table 8: ϕ_{gb} Assessment

Range of Average Risk Rating (ARR)	Overall Risk Category	ϕ_{gb} for low Redundancy systems	ϕ_{gb} for High Redundancy Systems
$ARR \leq 1.5$	Very Low	0.67	0.76
$1.5 < ARR \leq 2.0$	Very Low to Low	0.61	0.7
$2.0 < ARR \leq 2.5$	Low to Moderate	0.56	0.64
$2.5 < ARR \leq 3.0$	Moderate	0.52	0.6
$3.0 < ARR \leq 3.5$	Moderate to High	0.48	0.56
$3.5 < ARR \leq 4.0$	High	0.45	0.53
$4.0 < ARR \leq 4.5$	High to Very High	0.42	0.5
$ARR > 4.6$	Very High	0.4	0.47

3.3.5 Negative and Positive Skin Friction

Positive and Negative skin friction may be encountered at this site. These may be due to settlement of the piles, installation of the piles into compressible strata, shrinking and cracking of the upper soil layers or swelling soils. Foundations should be designed to reduce the effect of these factors.

4. Engineering Assessment

4.1 Pavement Subgrade

Subgrade conditions are expected to typically consist of new engineered filling, natural clays or clay fill depending on the height of the driveway above or below the existing ground surface.

The design of flexible pavements will depend on the quality of the potential subgrade material. Based on the investigation, the subgrade materials are likely to consist of gravelly, sandy or silty clay.

CBR testing was undertaken on the potential subgrade clay materials. This returned a CBR value of 11%. This then correlates as medium strength for pavement design.

The Modulus of Subgrade Reaction, k_s , of this material is 55kPa/mm.

Where more clayey materials are encountered below the basketball court, these materials may return CBR values of 5% to 7% depending on the composition of the material.

The subgrade material should be assessed and confirmed onsite once the final platform level is known and the subgrade material exposed.

The CBR of this material should then be confirmed by laboratory testing prior to finalising the pavement design.

4.2 Material Usage / Import Type

The fill material consisting of clayey sand & gravel and natural sandy silty clay where free of organic and deleterious material, may be used as fill in areas where filling is required.

Larger diameter cobbles and boulders may be encountered within the fill material and these larger diameter particles (>35mm diameter) may not be used within the fill.

The suitability of the fill material should be confirmed prior to placement.

It should be noted that the onsite soils could be expected to present difficulties in handling, placement, and compaction if the appropriate moisture content is not achieved, particularly if the soils are overly moist. The detailed design should consider the effect of earthworks on site classification.

If imported, reactive clay soils are to be used, close control of moisture content during placement and compaction is required so as to minimise the potential for swelling and shrinkage movement. A moisture content within the range of OMC (standard Optimum Moisture Content) -3% to OMC +1% is recommended. Foundation design must reflect the use of the potentially reactive clays if they are used as structural fill.

Generally, any imported general fill material should be free of deleterious material, of good quality with a Liquid Limit of less than 60% & Linear Shrinkage of less than 15%, a maximum particle size of 26mm with at least 90% passing the 19mm sieve. Quality testing to confirm imported fill quality should be carried out prior to delivery to site.

4.3 Excavatability

The target depth for termination of the boreholes was between 3m & 4m. All Boreholes were terminated at these depths. Drilling was undertaken using a 100mm diameter hydraulic auger. The sampling for the CBR was undertaken with a 300mm diameter hydraulic auger. This met refusal at 0.5m depth.

Excavations within the natural clays could be undertaken using conventional small to medium sized earthmoving equipment, such as drotts, backhoes or 5 to 15t (or larger) excavators.

Excavations within the fill materials may encountered cobbles and boulders. This material could be removed using conventional small to medium sized earthmoving equipment, such as drotts, backhoes or 5 to 15t (or larger) excavators, however, depending on the size of this material, larger equipment (>15T excavator) may be required.

It should be noted that the excavatability estimates are based on materials encountered at the test locations only and that conditions may differ for excavatability beyond these test locations and the termination depths drilled or excavated as part of this investigation.

4.4 Batter Slopes

Provided there are no structures, service trenches, traffic areas or other forms of surcharge near the slope crests, batter slopes cut to no deeper than 3m vertical height in natural soils may be designed for the batter angles presented in Table 9 below.

Short term slopes could also be benched at the overall angles given in Table 6.

Table 9: Batter Slope Angles (up to 3m in height)

Material		Short Term (°)	Long Term (°)
Fill	Loose to medium dense Firm	26 (1V:2H)	18 (1V:3H)
Clay	Firm Stiff	26 (1V:2H) 40 (1V:1.2H)	18 (1V:3H) 26 (1V:2H)

Surface protection of the batters will be required to reduce the potential risk of erosion. Ground cover such as grass, topsoil or mulch could be used. Diverting surface water away from the batters where possible will also reduce erosion potential.

Temporary excavations up to 1.5m in depth in the fill and natural clay soils can remain near vertical for short periods of time, provided that they remain dry at the time of construction and provided there are no loads, services, structures or traffic located within a distance from the crest of the batter equal to the slope height. This should be assessed by a geotechnical engineer or engineering geologist.

The above temporary batter slopes are suggested with respect to slope stability only, and do not allow for lateral stress relaxation which may result in movement of nearby in-ground services. If such services are settlement-sensitive and are located near the crest of the cut face, then the excavation may have to be positively supported.

If surcharge loads (i.e. footings) are applied near the crest of the slope then further geotechnical review and consideration should be given to flattening batters or stabilisation using soil nails. Where batters cannot be accommodated, shoring or support will be required.

4.5 Site Earthworks

The upper 100mm to 200mm across the site should be considered as topsoil. This material should

be removed during site preparation.

It is recommended where filling is required, particularly below the proposed structure, this is constructed in accordance with the procedures outlined in AS3798 – 2007.

AS3798 – 2007 recommends that before any fill is placed, the subgrade area below the fill area should be scraped free of all significant organic material and debris. All soils containing organic and deleterious matter should be stripped to the base of the root systems. This material is not considered suitable for reuse as controlled fill. The stripped soils could be stockpiled for landscaping purposes only.

AS3798 – 2007 recommends that the grub holes produced during tree removal should be backfilled and compacted to prevent 'soft' spots occurring underneath future structures which may lead to differential settlement. Backfilling must be done in accordance with the procedures outline in AS 3798 – 2007. This will also apply to backfilling the following the removal of large rocks.

If cut and fill is required, then the fill should be clean spoil recovered from the site cut and laid down in 150mm (maximum) layers. Each layer should be moistened and compacted using suitable compaction equipment to a minimum 95% standard compaction. Each 300mm lift should be tested in accordance with AS1289.5.1.1, 5.3.1 or 5.8.1 and 5.4.1.

The subgrade below any pavement layers or filled platform should be tyned to a depth of 150mm and recompacted a minimum of 98% standard compaction. The pavement layers for any carparks or driveways should be compacted to 100% standard compaction. The layers should be compacted in 150mm (maximum) layers. Each layer should be moistened and compacted using suitable compaction equipment. Each 300mm lift should be tested in accordance with AS1289.5.1.1, 5.3.1 or 5.8.1 and 5.4.1.

Should compaction testing be required, RMA Soils can be engaged to carry out compaction density testing during the bulk earthworks phase of the construction.

4.6 Seismic Sub-Soil Class and Site Factor

The site sub-soil class for earthquake actions in this report is based on assessment of geological information collected during the site investigations and methods provided in Australian Standard AS1170.4-2018 – Structural design actions - Part 4: Earthquake actions in Australia.

In accordance with Section 4.2 of AS1170.4 the site sub-soil class of the proposed site is "Class Ce – Shallow Soil." In accordance to Table 4.1 and Figure 3.2(F) a Hazard Design Factor of 0.08 should be adopted for the proposed site.

4.7 Site Trafficability

At the time of the field investigation trafficking problems were not encountered. Trafficking problems for earthworks and construction machinery, however, may arise due to the clayey nature of the surface and near surface materials. These problems may be caused by:

- Rainfall events softening the surface and near surface soils.
- Disturbance of the surface and near surface soils with the removal of vegetation, rock & ground cover and construction of underground elements.
- Disturbance of the surface and near surface soils with the construction of underground elements.

To minimise these problems, the site trafficability may be improved by:

- Controlling water seepage/drainage by diverting runoff away from the construction area to prevent ponding.
- Adequate compaction of the fill material used to backfill any constructed underground elements.
- Proof rolling the exposed area following stripping, clearing and grubbing to identify any weak areas and then compacting the subgrade, as outline in Section 8.1, to strengthen these areas
- “Sealing” the construction area by rolling with a smooth drum roller at the completion of each day or prior to any rain event.
- Providing an all-weather working layer consisting of either:
 - › crushed concrete type material, or
 - › large size gravel, or
 - › imported sub-base material.

Areas which demonstrate excessive movement and/or do not improve sufficiently after compaction should be removed and replaced as outlined in Section 4.5.

All subgrades below pavements, structures and heavy machinery should be inspected by competent persons to identify any weak areas in the founding materials. Weak areas may cause failures in pavements, structures and lead to issues with subsidence below heavy machinery during construction.

4.8 Working Platforms for Tracked Plant

Detailed design of a Working Platform for Tracked Plant should be carried out if large machinery is to be used during construction of the buildings. This is particularly important when considering the use of heavy cranes and piling rigs. The piling/crane contractor should be consulted regarding their requirements and a geotechnical study undertaken if required.

5. Construction Inspection

It is recommended that placement of all structural fill, footing excavations, and cut batter slopes in soil and rock together with building and pavement subgrades should be inspected by a suitably qualified Geotechnical Engineer/Engineering Geologist. Should subsurface conditions other than those described in this report be encountered, RMA Soils Pty Ltd should be consulted immediately and appropriate modifications developed and implemented if necessary.

6. Conclusions

A geotechnical investigation was undertaken within Lot 654 on registered plan SP241925, 60A Gardens Point Road Brisbane. The site is part of the QUT Gardens Point Campus. The field investigation was completed on the 22nd of November 2021.

It is understood that the proposed development likely include:

- Concrete basketball court
- Grandstand seating
- Kiosk
- Disable access
- Lighting

Two boreholes were drilled for the investigation. Borehole BH1 was drilled within the footprint of the previous building on the northern side of the pile foundation area and BH2 was drilled outside the footprint of the previous building to the north east. All boreholes were terminated at the target depths of 3m or 4m.

The investigations found fill material consisting of loose to medium dense clayey gravel & sand intermixed with cobbles & boulders, soft clayey sandy silt & firm to stiff sandy silty clay, and natural materials consisting of firm to stiff, sandy silty clays. Bedrock was not encountered within the termination depths of the boreholes. The natural moist clays encountered in BH2 at 3.1m appear to have a firm consistency.

Drilling for the CBR sample near the centre of the basketball court area encountered a mixture of gravel, sand, cobbles and boulders. It is likely that this area was a deeper excavation, possibly a basement structure, and was rehabilitated using a sand, gravel, rock fill mixture.

The fill appears to have had some type of compactive effort applied during placement. This is evidenced by the drilling resistance and that there are no significant depressions (some previous settlement may have been repaired) visible across the site at present to indicate that settlement of uncompacted or poorly compacted materials has occurred.

Laboratory testing was undertaken on selected materials within the fill and natural soils.

Atterberg limits testing indicate that the natural clays have medium to high plasticity.

CBR testing was undertaken the clayey sand & gravel fill material which returned a CBR value of 11%. This then correlates as medium strength for pavement design. Modulus of Subgrade Reaction, k_s , of this material is 55kPa/mm.

Groundwater was not encountered during the investigation.

In the absence of documentation to confirm the fill material was placed under Level 1 Inspection & Testing conditions in accordance with AS3798-2007, the fill should be considered as 'uncontrolled'. Treatment of this material in relation to the position of structures and foundation design will need to be considered.

Once the excavation is at the final platform height, this surface should be inspected to determine the bearing capacity of the subgrade materials. The base of the foundations should also be inspected to determine the bearing capacity of the founding materials.

7. Limitations

This investigation is intended as a geotechnical investigation to assess the surface and subsurface materials. The assessment is to be used to assist with the civil and structural design for the age care facility and associated infrastructure.

We have prepared this report for the use by Kane Construction (Qld) Pty Ltd or your preferred contractor for design purposed in accordance with generally accepted geotechnical engineering practices. No other warranty, expressed or implied, is made as to the professional advice included in this report. This report has not been prepared for use by parties other than Kane Construction (Qld) Pty Ltd or their approved consultants and/or contractors. It may not contain sufficient information for purposes of other parties or for other uses.

RMA Soils Pty Ltd offer a documentation review services to verify that the intent of geotechnical recommendations is properly reflected in the design. It is recommended that clients avail themselves of this service. Our standard fees would apply in those cases.

8. Appendices

8.1 APPENDIX A

8.1.1 Figures 1 - 11

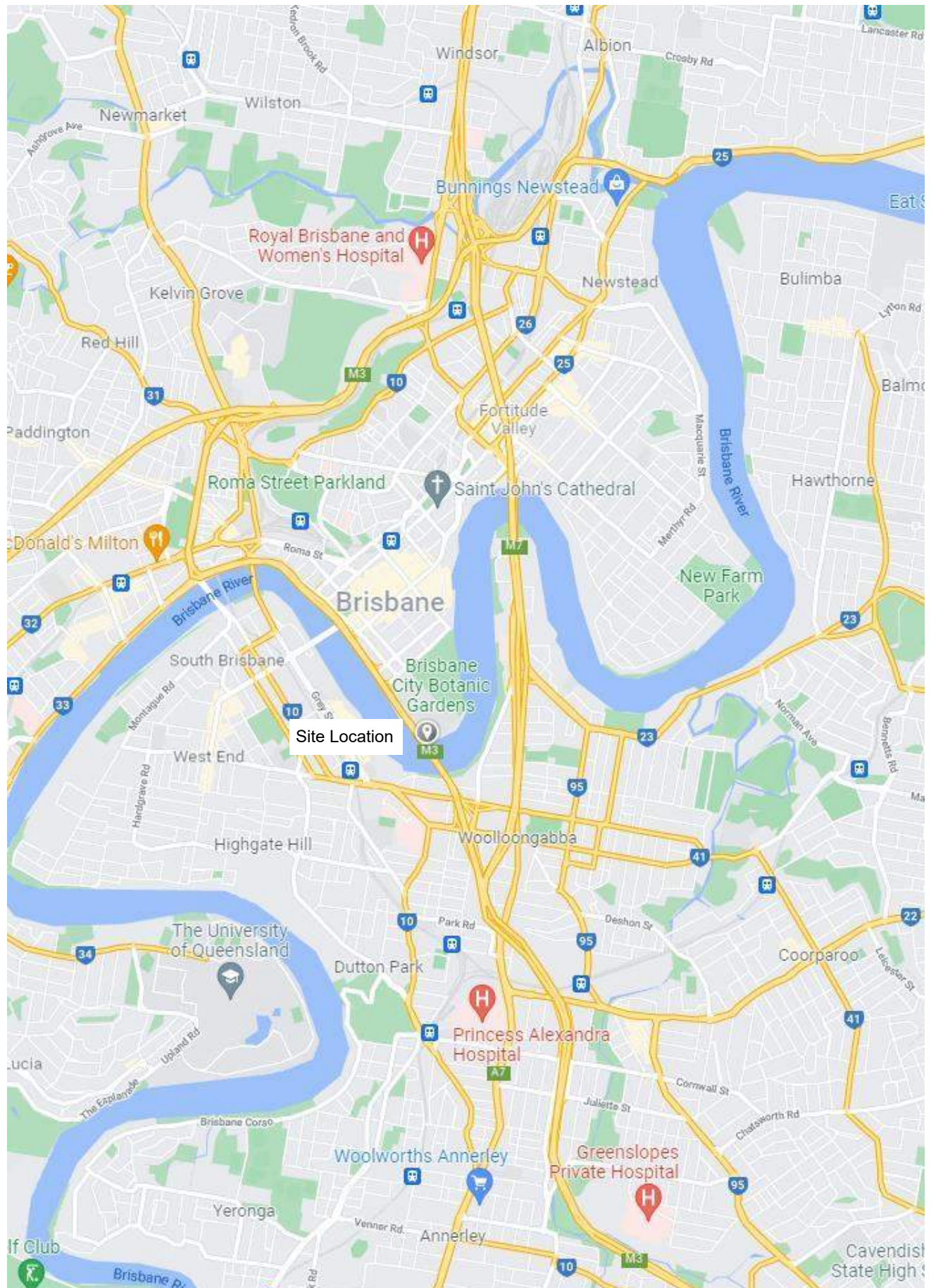


Figure 1: Site Location

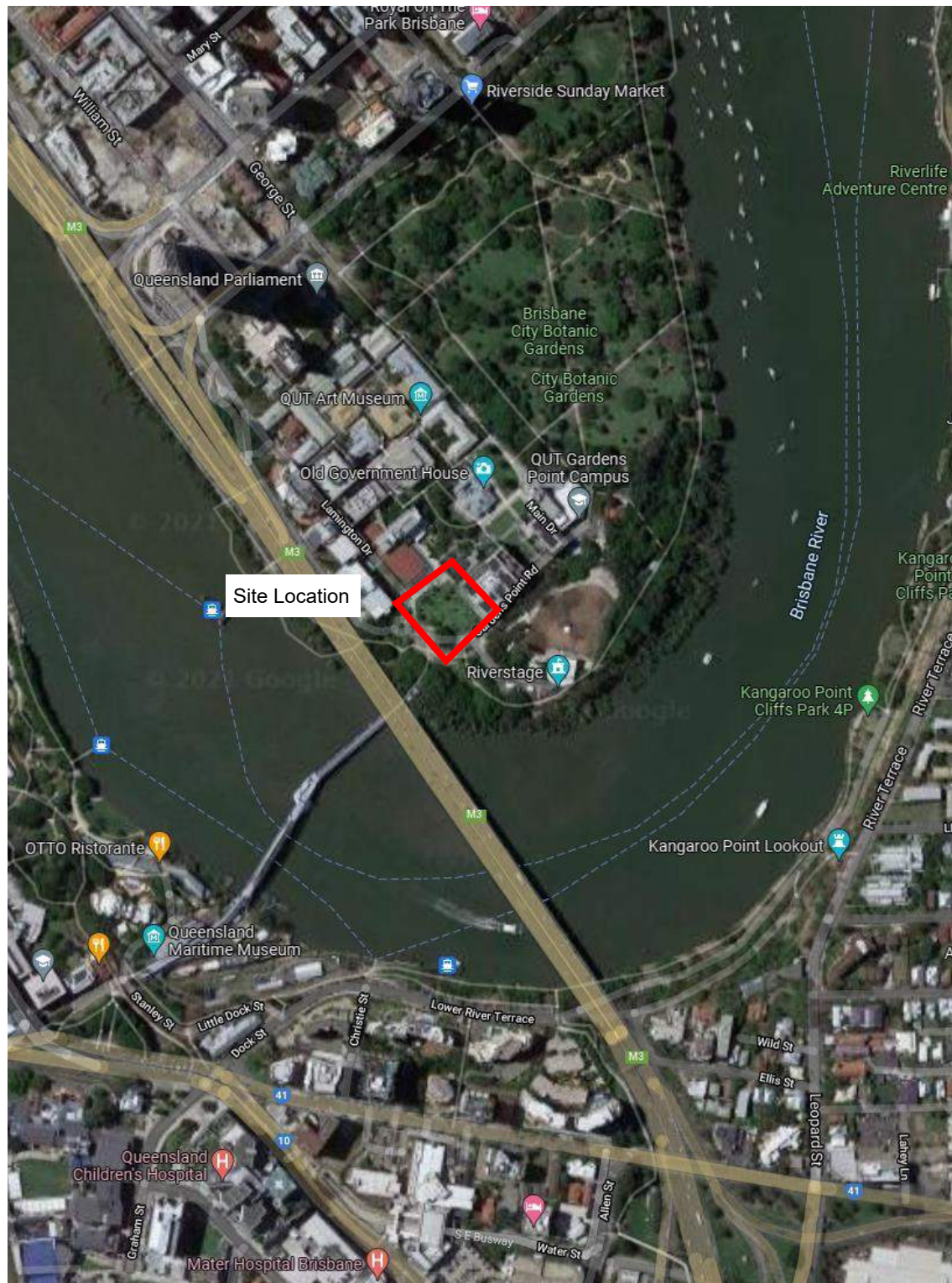


Figure 2: Aerial Map of the Site Location

JULY 2012



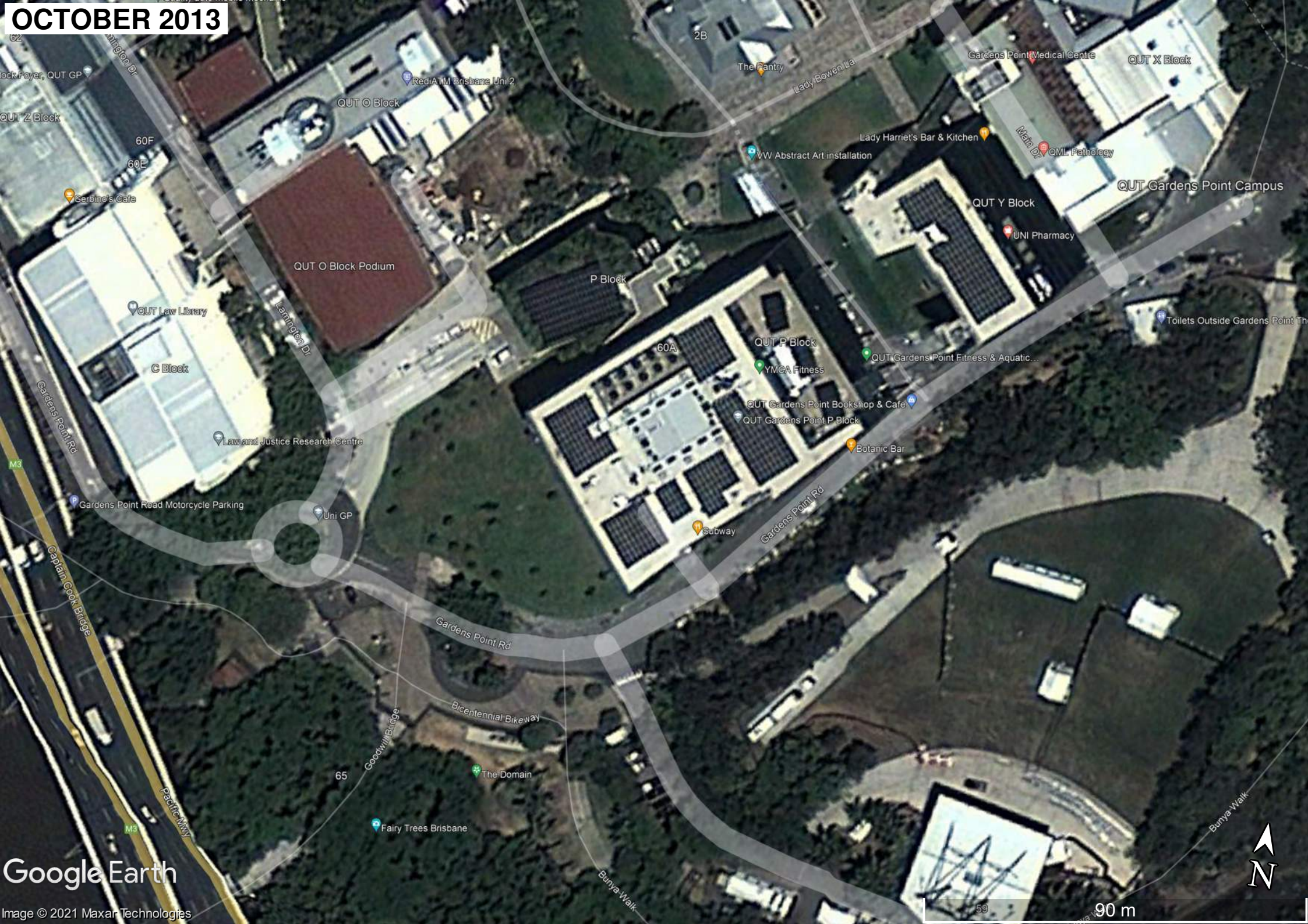
APRIL 2013



Google Earth

Image © 2021 Maxar Technologies

OCTOBER 2013



Google Earth

Image © 2021 Maxar Technologies



Figure 5: Photograph taken to the south west of BH1 looking north east



Figure 6: Photograph taken to the south west of BH1 looking east



Figure 7: Photograph taken to the south west of BH1 looking south east



Figure 8: Photograph taken to the north east of BH2 looking north west



Figure 9: Photograph taken to the north east of BH2 looking west



Figure 10: Photograph taken to the north east of BH2 looking south west

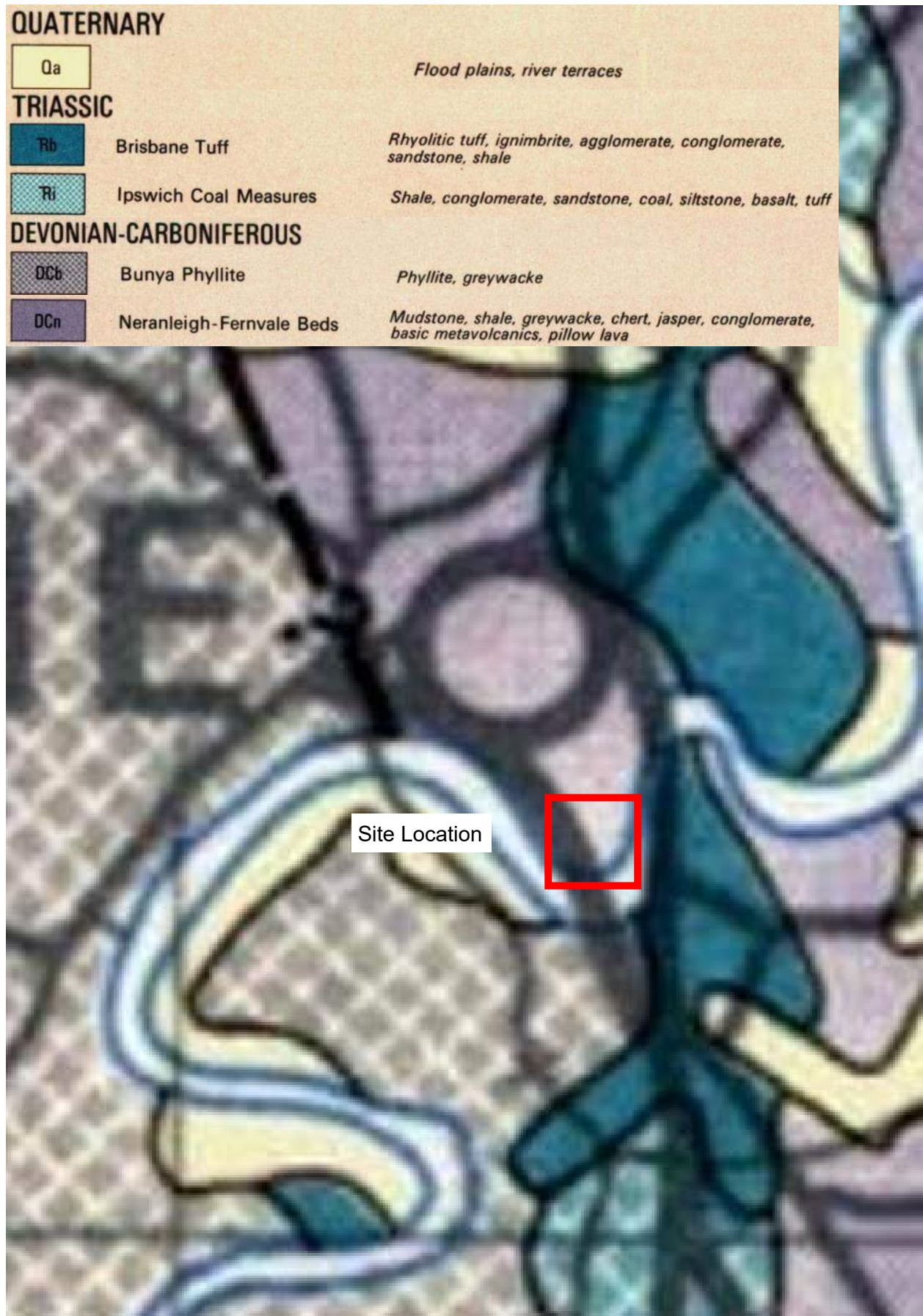


Figure 11: Regional Geology

8.2 APPENDIX B

8.2.1 Concept Plan

4/11/2021 12:10:45 PM

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DIMENSIONS

Use figured dimensions only. DO NOT SCALE. Check all dimensions on site prior to fabrication or setout.

PDT.
ARCHITECTS

www.pdt.com.au Quality Assurance AS/NZS ISO 9001

AMENDMENTS

Rev	Description	Date	Dwn	Chk
1	PRELIMINARY ISSUE	04.11.21	JS	LT

Project Leader L. Taylor

Lumpy Lawn Basketball Court QUT
2 George Street, Brisbane City QLD 4000
PERSPECTIVE VIEW

PRELIMINARY ISSUE

Scale @ A1 Phase Job No.

DD 9273

Dwg No. Revision

A 12-01 1

8.3 APPENDIX C

8.3.1 Contour Plan

LEGEND:

Road	Terrain
Kerb Back	Driveway
Kerb Invert	Footpath
Edge of Bitumen	Slab Edge
Edge of Gravel	Retaining Wall Base
Road Crown	Retaining Wall Top
Traffic Park Meter	Change of Grade
Traffic Light	Top of Bank
Traffic Pit	Toe of Bank
Traffic Sign	Waterline
Traffic Post Box	Garden Edge
	Creek Toe of Bank
Structures	Creek Top of Bank
Building Line	Creek Invert
Roof Ridgeline	Creek Waterline
Fence Line	Tree
Gate	Tree Canopy
Hand Rail	Control Point/PSM
Cattle Grid	
Bollard	
Sewer	Drainage
Sewer Line	Drainage line
Valve	Open Drain
Inspection Opening	Manhole
Manhole	Field Inlet
	Downpipe
Electrical	Communications
Electricity Line	Communication Line
Overhead Line	Overhead Line
Pits/Manholes	Pits/Manholes
Pole	Pillar
Street Light	Gas
Light In-Ground	Gas Line
Water	Valve
Water Line	Marker
Meter	
Valve	
Fire Hydrant	
Tap	
Sprinkler	
Fuel	Subsurface Utility -QL
Fuel Line	* (A) * Quality A (H±50mm,V±50mm)
Fitting	* (B) * Quality B (H±300mm,V±500mm)
	* (C) * Quality C (H±300mm,2D)
	* (D) * Quality D (Exist Record)

NOTES:

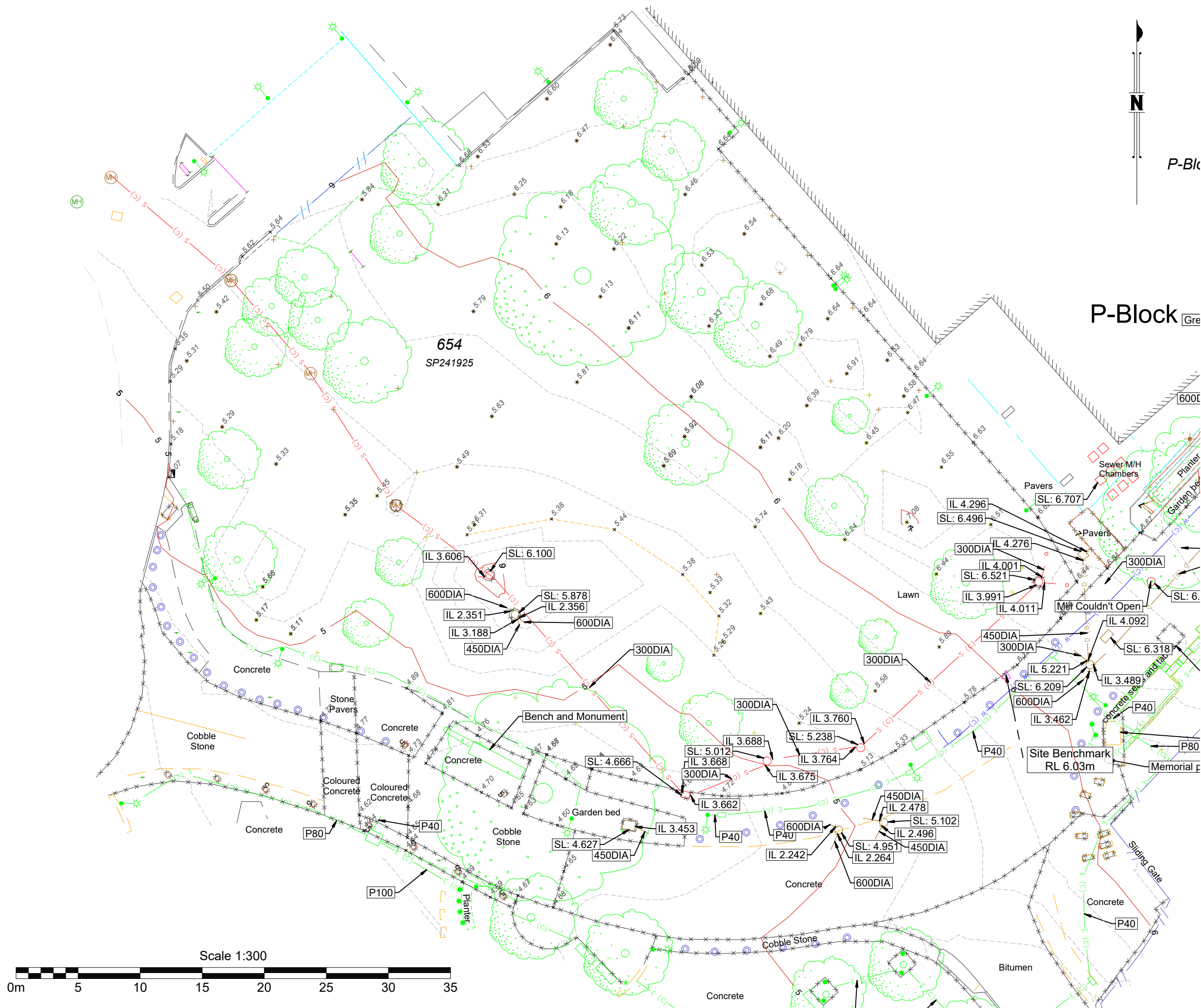
1. Drawn to scale on an A3 sheet.
2. Contour Interval... 0.25m
3. All levels are in metres on the Australian Height Datum referred to 9016GIB - RL 5.335 AHD.
4. All Boundaries are vide title and subject to confirmation by survey.
5. The Location of Underground services are in accordance with AS5488:2019, the Australian Standard for classification of Subsurface Utility Information (SUI). The exact nature and location of these services should be confirmed prior to construction.
6. Field Survey Completed on 20/10/2021

Level datum: AHD Derived (9016GIB)
Horiz datum: MGA Derived TRAV (PM15437 - PM90753)
Coord Origin: (PM15437)
GDA System: GDA94 Coordinate System: Plane 1:1
Meridian: - 00°00'40" IS291913

Title:

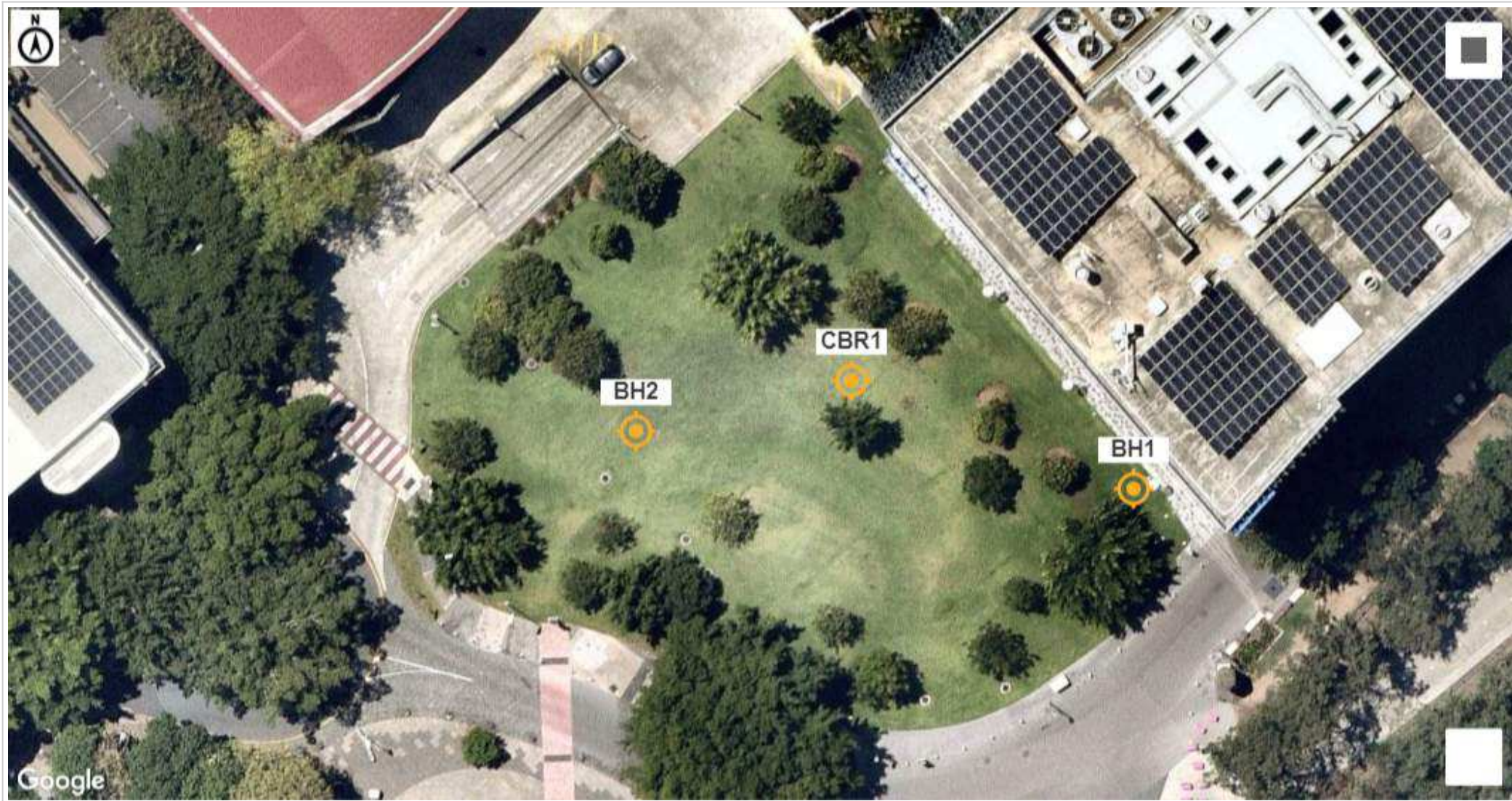
VERIFICATION PLOT
QUT Gardens Point
Lumpy Lawn

Client:	KANE
Locality:	Brisbane
Local Gov:	Brisbane City Council
Surveyed By:	GO
Approved:	CW
Date Created:	27/10/21
Scale:	1:300
File Ref:	13065
Plan No:	13065_018_VER
Rev:	A



8.4 APPENDIX D

8.4.1 Site Map



	 (07) 4639 4100  5 Bowen Street, Toowoomba Qld 4350  enquiries@rmasoils.com.au	Map description			0275 Site Map		
		Site location			QUT Gardens Point Campus, George Street, Brisbane City QLD		
		Client			Kane Constructions (Qld) Pty Ltd		
		Project name			GA - QUT Basketball Court		
		Project No			21-S-0275	Scale	Not to Scale

8.5 APPENDIX E

8.5.1 Borelogs BH1 – BH2



RMA Soils
Toowoomba
Phone: 07 3846 5885

Engineering Log - Borehole

Borehole No.: BH1

UTM	: 56J	Driller Rig	: Fuso Drill Rig	Job Number	: 21-S-0275
Easting	: 502879.8	Driller Supplier	: RMA Soils	Client	: Kane Constructions (Qld) Pty Ltd
Northing	: 6960559.2	Logged By	: Danny Coleborn	Project	: GA - QUT Basketball Court
RL	: N/A	Date	: 22/11/2021	Location	: QUT Gardens Point Campus, George Street, Brisbane City QLD
Total Depth	: 3m				

Drilling Information				Material Description							Test Samples				
Drill Method	Water	RL	Hole Depth(m)	Soil Origin	Graphic Log	Classification Code	Description	Weathering	Moisture	Consistency-Density-Strength	DCP Test Results	Test Depth	Tests	Sample / Result	ASS Sample
100mm SFA				Fill		ML	CLAYEY SANDY SILT (ML) : Soft, low plasticity, brown black, low plasticity clay, fine grained sand, inorganic, w ≈ pl. (dry to moist)		w ≈ PL	S					
			0.3	Fill		SC	CLAYEY SILTY GRAVELLY SAND (SC) : Medium dense, fine to coarse grained, brown grey, low to medium plasticity clay, fine to coarse sized gravel, moist to dry. (dry to moist)		M-D	MD					
			1.0												
			2.0												
			2.1	Natural		CI-CH	SILTY SANDY CLAY (CI-CH) : Firm to stiff, medium to high plasticity, yellow brown, fine to coarse grained sand, trace fine sized gravel, w > pl. (moist)		w > PL	F-St					
			3.0												
			3												
							BH1 Terminated at 3m								

Water	Weathering	Altering	Consistency	Density	Rock Strength	Tests&Results
Water inflow Water outflow	XW : Extremely altered DW : Distinctly weathered HW : Highly weathered MW : Moderately weathered SW : Slightly weathered FR : Fresh	XA : Extremely altered DA : Distinctly altered HA : Highly altered MA : Moderately altered SA : Slightly altered	VS : Very soft S : Soft F : Firm St : Stiff VSt : Very stiff H : Hard FR : Friable Moisture D : Dry M : Moist W : Wet	VL : Very loose L : Loose MD : Medium dense D : Dense VD : Very dense	VLS : Very low LS : Low MS : Medium HS : High VH : Very high XH : Extremely high	U50 : Undisturbed 50mm diam tube D : Disturbed sample. SPT : Standard Penetration Test, N = number of blows to drive 50mm sampler 300mm with a 63.6kg hammer falling 762mm PP : Hand penetrometer estimate of unconfined compressive strength, kPa. S : Vane shear value kPa Dynamic Cone test, 9.09kg hammer, fall 508mm, driving 20mm, 30 deg taper cone fitted to rods of smaller section. From AS1289-1993 Methods of Testing Soils for Engineering Purposes DC :



RMA Soils
Toowoomba
Phone: 07 3846 5885

Engineering Log - Borehole

Borehole No.: BH2

UTM	: 56J	Driller Rig	: Fuso Drill Rig	Job Number	: 21-S-0275
Easting	: 502833.3	Driller Supplier	: RMA Soils	Client	: Kane Constructions (Qld) Pty Ltd
Northing	: 6960564.5	Logged By	: Danny Coleborn	Project	: GA - QUT Basketball Court
RL	: N/A	Date	: 22/11/2021	Location	: QUT Gardens Point Campus, George Street, Brisbane City QLD
Total Depth	: 4m				

Drilling Information				Material Description							Test Samples				
Drill Method	Water	RL	Hole Depth(m)	Soil Origin	Graphic Log	Classification Code	Description	Weathering	Moisture	Consistency-Density-Strength	DCP Test Results	Test Depth	Tests	Atterberg Limits	ASS Sample

100mm SFA				Fill		ML	CLAYEY SANDY SILT (ML) : Soft, low plasticity, brown black, low plasticity clay, fine grained sand, inorganic, w ≈ pl. (dry to moist)		w ≈ PL	S					
			0.4	Fill		GC	CLAYEY SILTY SANDY GRAVEL (GC) : Medium dense, fine to coarsesized, grey, low to medium plasticity clay, fine to coarse grained sand, dry.		D	MD					
			1.0												
			1.1	Fill		CI-CH	SILTY SANDY CLAY (CI-CH) : Firm to stiff, medium to high plasticity, brown, fine grained sand, w ≈ pl. (dry to moist)		w ≈ PL	F-St					
			1.9												
			2.0	Natural		CI-CH	SILTY SANDY CLAY (CI-CH) : Stiff, medium to high plasticity, dark brown, fine grained sand, w ≈ pl. (dry to moist)		w ≈ PL	St					
			3.0												
			3.1	Natural		CI-CH	SILTY SANDY CLAY (CI-CH) : Firm, medium to high plasticity, brown yellow, fine to medium grained sand, w > pl. (moist)		w > PL	F					

Water	Weathering	Altering	Consistency	Density	Rock Strength	Tests&Results
Water inflow Water outflow	XW : Extremely weathered DW : Distinctly weathered HW : Highly weathered MW : Moderately weathered SW : Slightly weathered FR : Fresh	XA : Extremely altered DA : Distinctly altered HA : Highly altered MA : Moderately altered SA : Slightly altered	VS : Very soft S : Soft F : Firm St : Stiff VSt : Very stiff H : Hard FR : Friable Moisture D : Dry M : Moist W : Wet	VL : Very loose L : Loose MD : Medium dense D : Dense VD : Very dense	VLS : Very low LS : Low MS : Medium HS : High VH : Very high XH : Extremely high	U50 : Undisturbed 50mm diam tube D : Disturbed sample. Standard Penetration Test, N = number of blows to drive 50mm sampler 300mm with a 63.6kg hammer falling 762mm SPT : Hand penetrometer estimate of PP : unconfined compressive strength, kPa. S : Vane shear value kPa Dynamic Cone test, 9.09kg hammer, fall 508mm, driving 20mm, 30 deg taper cone fitted to rods of smaller section. From AS1289-1993 DC : Methods of Testing Soils for Engineering Purposes



RMA Soils
Toowoomba
Phone: 07 3846 5885

Engineering Log - Borehole

Borehole No.: BH2

UTM	: 56J	Driller Rig	: Fuso Drill Rig	Job Number	: 21-S-0275
Easting	: 502833.3	Driller Supplier	: RMA Soils	Client	: Kane Constructions (Qld) Pty Ltd
Northing	: 6960564.5	Logged By	: Danny Coleborn	Project	: GA - QUT Basketball Court
RL	: N/A	Date	: 22/11/2021	Location	: QUT Gardens Point Campus, George Street, Brisbane City QLD
Total Depth	: 4m				

Drilling Information				Material Description							Test Samples				
Drill Method	Water	RL	Hole Depth(m)	Soil Origin	Graphic Log	Classification Code	Description	Weathering	Moisture	Consistency-Density-Strength	DCP Test Results	Test Depth	Tests	Atterberg Limits	ASS Sample
			4.0 4											LL - % LS - % Iss -	
							BH2 Terminated at 4m								

Water	Weathering	Altering	Consistency	Density	Rock Strength	Tests&Results
Water inflow Water outflow	XW : Extremely weathered DW : Distinctly weathered HW : Highly weathered MW : Moderately weathered SW : Slightly weathered FR : Fresh	XA : Extremely altered DA : Distinctly altered HA : Highly altered MA : Moderately altered SA : Slightly altered	VS : Very soft S : Soft F : Firm St : Stiff VSt : Very stiff H : Hard FR : Friable Moisture D : Dry M : Moist W : Wet	VL : Very loose L : Loose MD : Medium dense D : Dense VD : Very dense	VLS : Very low LS : Low MS : Medium HS : High VH : Very high XH : Extremely high	U50 : Undisturbed 50mm diam tube D : Disturbed sample. SPT : Standard Penetration Test, N = number of blows to drive 50mm sampler 300mm with a 63.6kg hammer falling 762mm PP : Hand penetrometer estimate of unconfined compressive strength, kPa. S : Vane shear value kPa Dynamic Cone test, 9.09kg hammer, fall 508mm, driving 20mm, 30 deg taper cone fitted to rods of smaller section. From AS1289-1993 Methods of Testing Soils for Engineering Purposes DC :

8.6 APPENDIX F

8.6.1 Atterberg Limits Reports

8.6.2 CBR Test Reports

8.7 APPENDIX G

8.7.1 Broms Method

BROMS METHOD: LATERAL CAPACITY AND DEFLECTIONS OF PILES

BACKGROUND

The methods of Broms (Ref 1 and 2) can be used to calculate the resistance of soil to lateral loads on piles. Solutions are provided for both Short and long piles, for Free head and Fixed head restraint, and for both cohesive soils (Ref 1) and cohesionless soils (Ref 2) if it is not clear whether a pile is short' or 'long', then the pile should be checked for both, and the lesser value adopted.

The Broms methods are relatively simplistic, compared to more complex finite element solutions, but can be applied without using complex software packages.

The methods are limited to homogeneous soils, adopting either undrained shear strength (c_u) for short term loading in cohesive soils (e.g. silts and clays), or friction angle (ϕ) for either short term or long-term loading in cohesionless soils (e.g. sands and gravels). For long term sustained loading in cohesive soils, the cohesionless approach can be adopted using effective stress parameters (c' / ϕ') but with c' equal to zero.

For the cohesive soils model, ultimate lateral resistance is assumed as zero down to a depth of $1.5B$ (where B is the pile diameter) and $9c_uB$ below this depth. For the cohesionless soils model, the ultimate lateral resistance is estimated as three times the passive Rankine earth pressure, i.e. $3K_p\gamma BL$ (where K_p is the coefficient of passive earth pressure, γ is soil density, and L is pile depth below ground level).

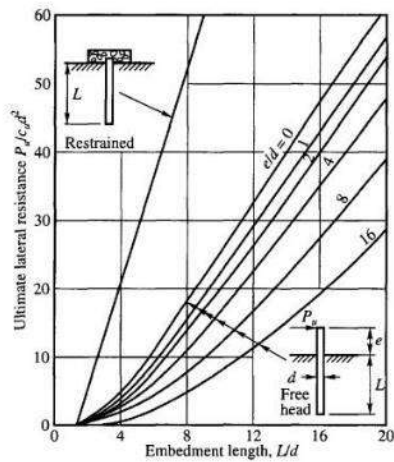
Calculation of deflection is usually considered as Indicative only (it may not be as accurate as other methods) and corresponds to application of working stress (i.e. where the ultimate lateral load is factored down by 2 or 3).

CALCULATION OF ULTIMATE LATERAL LOAD

To calculate the ultimate lateral load, P_u , for a 'short' pile, use Figure 1 for the cohesive soil model and Figure 2 for the cohesionless soil model. Enter the x-axis by calculating the length to diameter, L/B , ratio. Select the appropriate line to use, based on ground restraint conditions, and, where free head', the load eccentricity to pile diameter, e/B , ratio. After obtaining the appropriate values on the y-axis, multiply this by c_uB^2 for cohesive soil or $K_pB^3\gamma$ for cohesionless soil to obtain the ultimate lateral load, P_u .

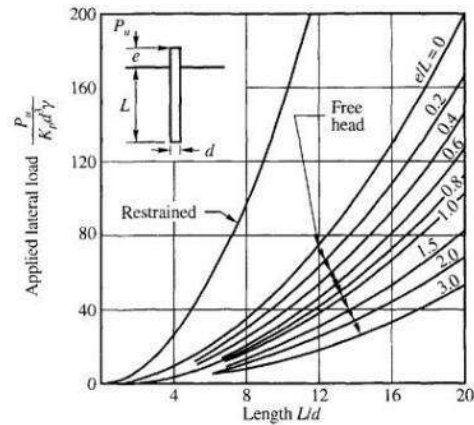
To calculate the ultimate lateral load, P_u , for a long' pile, corresponding to the yield moment, M_{yield} , use Figure 3 for the cohesive soil model and Figure 4 for the cohesionless soil model. Enter the x-axis by calculating M_{yield}/c_uB^3 . Select the appropriate line to use based on ground restraint conditions, and where 'free head', the load eccentricity to pile diameter, e/B ratio. After obtaining the appropriate values on the y-axis, multiply this by c_uB^2 for cohesive soil or $K_pB^3\gamma$ for cohesionless soil to obtain the ultimate lateral load, P_u .

Figure 1



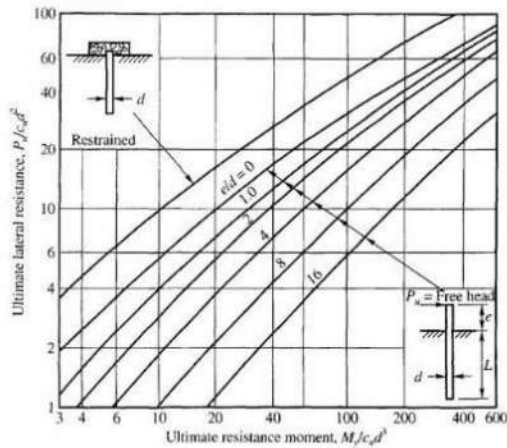
Ultimate lateral resistance of a short pile in cohesive soil related to embedded length (after Broms (1964a))

Figure 2



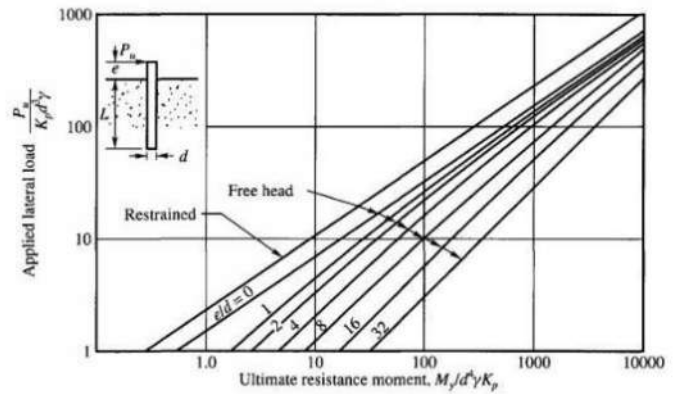
Ultimate lateral resistance of a short pile in cohesionless soil related to embedded length (after Broms (1964b))

Figure 3



Ultimate lateral resistance of a long pile in cohesive soil related to embedded length (after Broms (1964a))

Figure 4



Ultimate lateral resistance of a long pile in cohesionless soil related to embedded length (after Broms (1964b))

ESTIMATING LATERAL DEFLECTION

At working lateral load H (i.e. P_u divided by 2 to 3) the lateral deflection can be estimated by assuming that, at any particular pile depth, the unit soil reaction, p , increases linearly with increasing lateral deflection, as follows:

$$P = k_h y$$

where

k_h = the modulus of horizontal subgrade reaction (kN/m^3);

p = unit soil reaction (kN/m^2);

y = lateral deflection (m)

Cohesive Soil (stiff or better):

For 'stiff and overconsolidated clay soils, k_h is assumed to be constant with depth, resulting in the dimensionless lateral deflections being plotted in Figure 5 as a function of dimensionless length βL in which:

$$P = (k_h B/4EI)^{1/4}$$

where

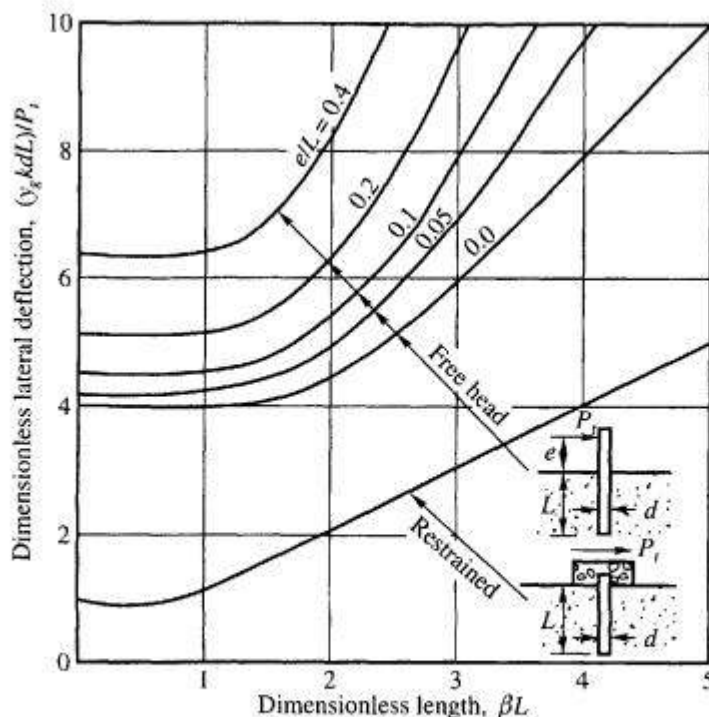
E = the elastic modulus of the pile material;

I = the moment of inertia of the pile;

B = pile diameter

After entering the x-axis on Figure 5 with the βL value, select the line appropriate to the restraint condition, and, in the case of a 'free-head' pile, the load eccentricity to pile depth, e/D , ratio. The lateral deflection at ground surface due to the applied working load, H , is then calculated by dividing the y-axis value by $k_h BL/H$.

Figure 5



Charts for calculating lateral deflection at the ground surface of horizontally loaded pile in cohesive soil (after Broms 1964a)

Cohesionless Soil (and 'soft' clays):

For sands and gravels and 'soft' clays, k_h is assumed to increase linearly with depth as follows:

$$k_h = \eta_h z/B$$

where

k_h = the modulus of horizontal subgrade reaction (kN/m³);

z = depth below ground level (m);

η_h = coefficient of modulus variation with depth;

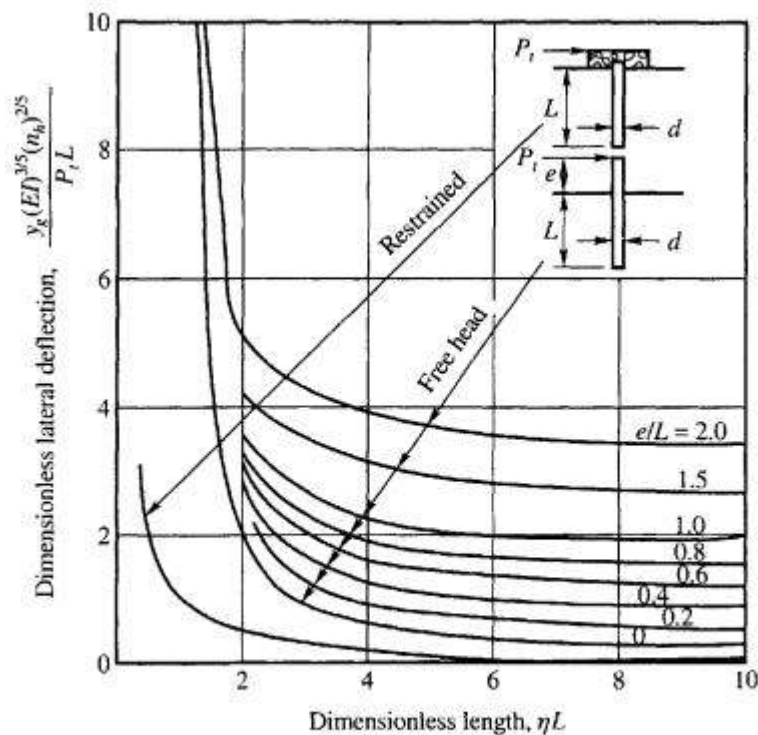
B = pile diameter

This results in the dimensionless lateral deflections being plotted in Figure 6 as a function of dimensionless length ηL in which:

$$\eta = (\eta_h/EI)^{1/5}$$

After entering the x-axis on Figure 6 with the ηL value, select the line appropriate to the restraint condition, and, in the case of a 'free-head' pile, the load eccentricity to pile depth, e/D , ratio. The lateral deflection at ground surface due to the applied working load, H , is then calculated by dividing the y-axis value by $(EI)^{3/5} \cdot (\eta_h)^{2/5} / (H/L)$.

Figure 6



Charts for calculating lateral deflection at the ground surface of horizontally loaded piles in cohesionless soil (after Broms 1964b)

REFERENCES

1. Broms, Bengt B, "Lateral Resistance of Piles in Cohesive Soils", Proceedings of the American Society of Civil Engineers, Journal of the Soil Mechanics and Foundations Division, Vol 90, SM2, 1964.
2. Broms, Bengt B, "Lateral Resistance of Piles in Cohesionless Soils", Proceedings of the American Society of Civil Engineers, Journal of the Soil Mechanics and Foundations Division, Vol 90, SM3, 1964.



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OPTUS



ACCREDITED
PLANT
LOCATOR



ABN 12 101 792 956
ACN 101 792 956

Underground Service Locations

Site Report/Site Details

Asset Detection Specialist	Lloyd Harrington
Client	Kane Constructions
Contact Name / Number	Dennis – 0406676729
Email	hrobinson@kane.com.au
Date of Works	19.11.21
Site Address	60A Gardens Point Road, Brisbane City
Scope Of Works	As per emailed request (grass area)

The following information and report is generated as Lambert Locations Pty Ltd. has been engaged with the sole purpose for a specific job and client with the intention to assist in minimising damage to underground utilities/services. The client acknowledges that the following findings or readings produced are only correct at the time stated upon this document as underground assets are installed and ground levels can change without our knowledge. Depths, levels and materials shown are supplied as a guide only and should always be verified by potholing before excavation. This note is an integral part of the report that follows.

AS 5488-2019 CLASSIFICATION OF SUBSURFACE UTILITY INFORMATION (SUI)

This standard provides a framework for the classification of subsurface utility location and attributes information in terms of specified quality levels. The objective of this standard is to provide utility owners, operators and locators with a framework for the consistent classification of information concerning subsurface utilities. Project risks related to underground utilities can then be properly managed. A quality level describes the amount and accuracy of information that is collected or held on a subsurface utility. There are four quality levels-D, C, B and A.

Quality Level A: Highest level of accuracy; individual point for pipe/service,

Quality Level B: Traced alignments for subsurface utilities services that induce an electromagnetic current,

Quality Level C: Aligned between sighted surface structures indicating a probable subsurface alignment,

Quality Level D: Historical records or GPR image field verification.

Service	Quality Level B	Quality Level C or D
Sewer		
Storm Water		
Water		
Telstra		
Electricity		
Gas		
Unknown		
Recycled Water		

L 88854



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OPTUS

ACCREDITED
PLAN
LOCATOR

VERIFIED
LOCATOR

ABN 12 101 792 956
ACN 101 792 956

Date: 19 / 11 / 21 Operator: LLOYD

Client: KANE CONSTRUCTIONS

Contact: DENNIS PH: 0406 676 729

Site address: 60A GARDENS POINT ROAD
BRISBANE CITY

Requested area: AREA AS REQUESTED ON
EMAIL (GRASS AREA ONLY)

Unit Requested

Concrete Scan ☐ Leak/Corr. ☐

Locator ☒ Survey ☐ Labour ☐

Has a current plan for each service been provided? ☒ Yes ☐ No

No plans provided for: CoG Internal/As-Cons

DBYD No: SDI 17560/30928527 Digital ☒ Hardcopy ☐ Client ☐

O/No: PO-03CWT-BB

Job No: 2498

Unit Type: DMF / 200 GPR H: 8

Extra: THIN WALL H: 8

Extra: H: 8

After Hours ☐ Total Hours: 8

ALL KNOWN SERVICES			SERVICES REQUESTED		INTERNAL (NO DBYD)	
UTILITY LOCATED	BRIEF DESCRIPTION	AS 5488 QUALITY LEVEL	UTILITY LOCATED	BRIEF DESCRIPTION	AS 5488 QUALITY LEVEL	
Telstra Local	NOT IN WORK AREA, COMING FROM PIT TO PIT THROUGH WORK AREA	(D)	Elec - Internal	TRACED FROM POLE TO POLE & PIT TO PIT THROUGH WORK AREA	(E)	
Telstra Main	AREA (B)	(D)	Electricity - LV			
	ATTEMPTED TO TRACE PASS ELECTRICAL ONTO POLE BUT NO ELEC WIRE TRUCK		Electricity - HV			
NBN	NOT IN WORK AREA	(D)	Street lights			
Optus			Traffic signals			
Uecomm	NOT IN WORK AREA	(D)	Gas	UNABLE TO TRACE NYLON 60mm LINE - NO TV	(D)	
NextGen	NOT IN WORK AREA	(D)	Drainage	RODDED & TRACED MULTIPLE LINE DEPTH & DIRECTION @ LIDS	(E)	
TPG			Water	ATTEMPTED TO TRACE & THUMP NO SIGNAL DETECTED MILD	(D)	
Other/Extras	ARZNET/POWERLINK - NOT IN WORK AREA	(D)	Recycled water	NO SIGNAL DETECTED MILD		
PASSIVE SWEEPS SHOW NO ADDITIONAL HAZARDS MUST USE VAC TRUCK			Sewer - Gravity	RODDED PIPES THAT WERE ACCESSIBLE DEPTH & DIRECTION @ OTHERS THAT WERE DEEP	(B)	
			Sewer - Rising			

"THE ABOVEMENTIONED ASSETS HAVE BEEN ELECTRONICALLY TRACED AS PER AS5488"

POTHOLING IS ESSENTIAL FOR VERIFICATION

☒ Opened all pits ☒ Rod all empty conduits/fibre/non-conductive ☒ Induction/Passive/Power scan ☒ GPR scan
☒ Hazard assessment ☒ Client handover ☒ Email/Phone Call ☒ Hire Docket Sent ☒ Potholing Required

Paint marking colours:

☐ White - Telecommunications (C) ☐ Green - Drainage/S-Water (SW) ☐ Yellow - Gas (G) ☐ Lilac - Recycled Water (RW)
☐ Cream - Sewer (S) ☐ Orange - Electricity (E) ☐ Blue - Water (W) ☐ Pink - Unknown

Pipe & cable locators do not find pipes and cables, they find magnetic fields

PLEASE NOTE YOUR DUTY OF CARE OBLIGATIONS

Some services may remain undetected By signing this you have agreed to the conditions of hire on the reverse side of this document.

Conditions of hire on reverse.

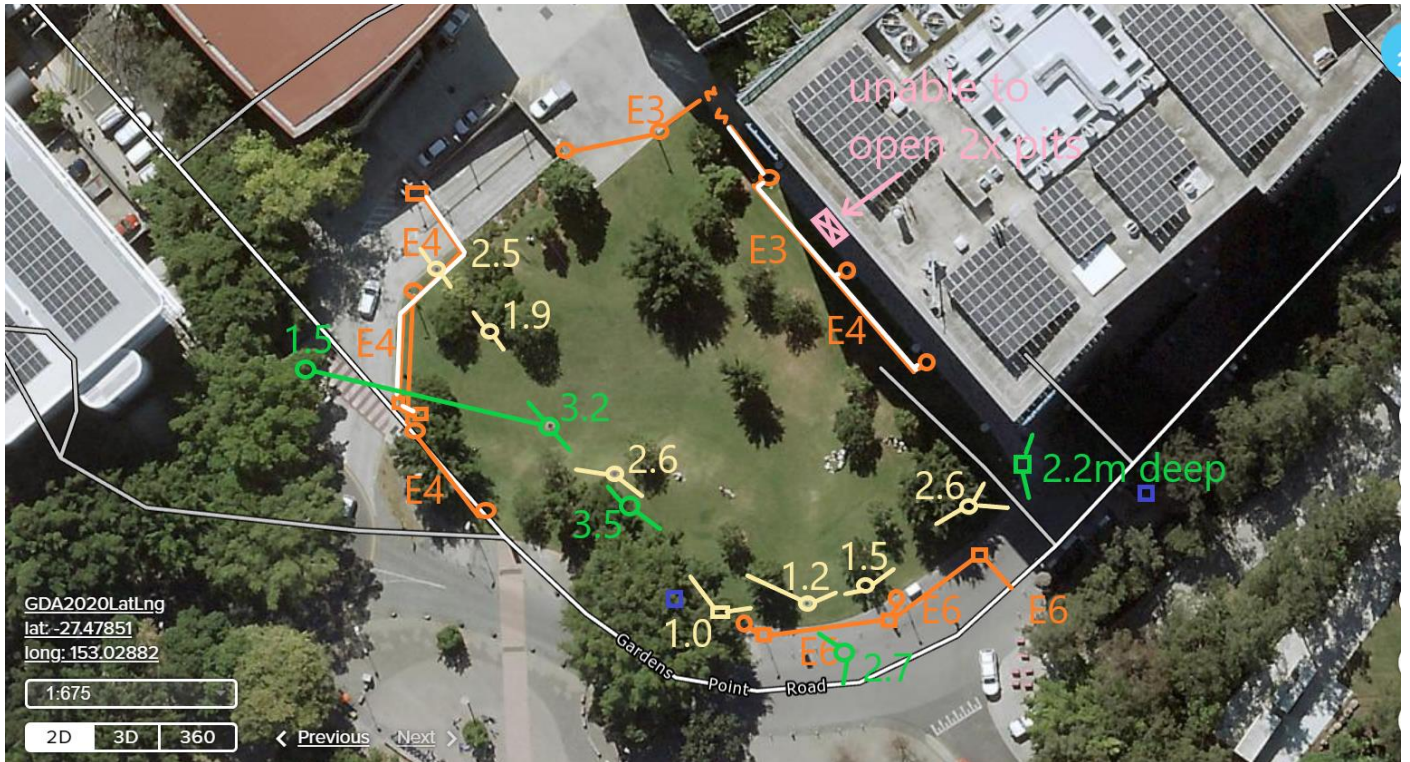
Site Report ☒ Yes ☐ No

Sent to client ☒ Yes ☐ No

Print name/number _____

Signature _____

Email _____







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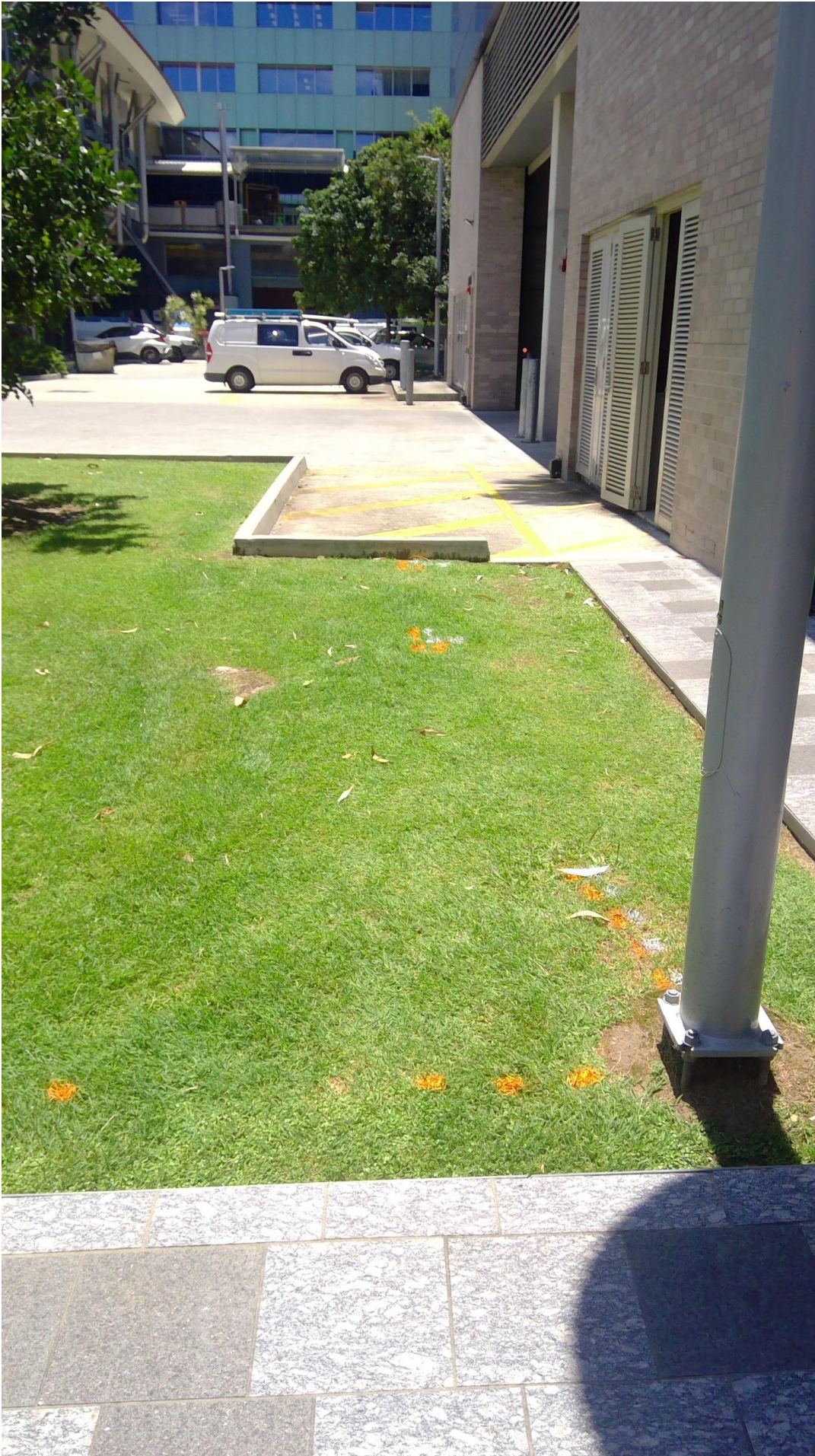
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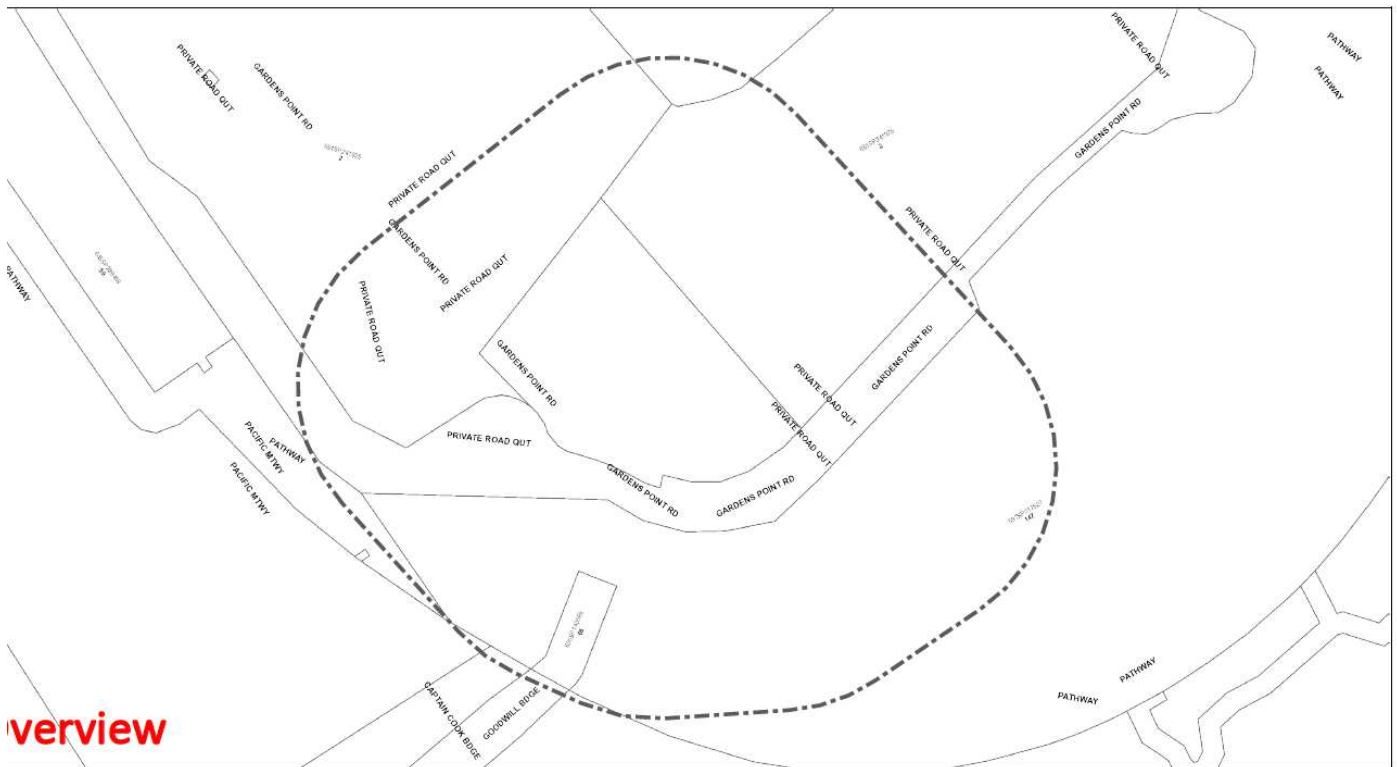
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Dials for APA show no way of tracing and no markers on site to work off, attempted to GPR in poss area shown on dials. Must use vac truck.



anUtilities

Dial Before You Dig - Urban Utilities Water, Recycled Water and Sewer Infrastructure

DBYD Reference No: 205414514

Date DBYD Ref Received: 19/11/2021

Date DBYD Job to Commence: 20/11/2021

Date DBYD Map Produced: 19/11/2021

This Map is valid for 30 days

Sewer

- Infrastructure
- ◆ Major Infrastructure
- Network Pipelines
- ▨ Network Structures

Water

- Infrastructure
- ◆ Major Infrastructure
- Network Pipelines
- ▨ Network Structures
- - - Water Service (indicative only)

N

Map Scale
1:1000

While reasonable measures have been taken to ensure the accuracy of the information contained in this plan response, neither Urban Utilities nor PalssonCorp shall have any liability whatsoever in relation to any loss, damage, cost or expense arising from the use of this plan response or the information contained in it or the completeness or accuracy of such information. Use of such information is subject to and constitutes acceptance of these terms.

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This plan should be used as guide only. Any dimensions should be confirmed on site by the relevant authority.

Based on or contains data provided by the State of Queensland (Department of Natural Resources and Mines) [2020]. In consideration of the State permitting the use of this data you acknowledge and agree that the State gives no warranty in relation to the data (including accuracy, liability in negligence) for any loss, damage or costs (including consequential damage) relating to any use of the data. Data must not be used for direct marketing or be used in breach of the privacy laws. © State of Queensland Department of Natural Resources and Mines [2020]

For further information, please call Urban Utilities on 13 26 57 (toll-free weekdays). Faults and emergencies 13 23 44 (24/7).

www.urbanutilities.com.au AIN 66 673 835 051

QUU shows no water directions or valves, attempted to thump from FH on site no signal detected, GPR'd mild hits between hydrants and valves, no signal in grass (work area). Must use vac truck.































- RetainTree
- Demolish Tree
- Relocate Tree

This tree is very close to the concrete seat footings. TBA if this can be retained.